kopter

# Kopter Press Book

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Day of company rebranding

December 3, 2018

# Third Prototype Kopter SH09 Helicopter Makes First Flight

AIN Online, Nov 28, 2018

Kopter Group’s third SH09 composite turbine-single helicopter prototype (P3) made its first flight recently from the company's Mollis, Switzerland airfield headquarters. The flight lasted 40 minutes and involved a series of maneuvers aimed at obtaining preliminary flight data, evaluating flight qualities, and validating design test features.

P3 incorporates improvements and modifications based on testing of the first two prototypes, the company said. Richard Trueman, Kopter chief test pilot, said P3 “demonstrated excellent handling characteristics.” Trueman was joined onboard by Michele Riccobono, Kopter chief technical officer and head of flight operations, and Adam Reynolds, chief flight test engineer.

The company plans to continue flight testing P3 in Sicily and it will be joined by a fourth test helicopter, Pre-Series 4 (PS4), next year. Also next year, Kopter plans on turning its Mollis facility into a commercial production center. Kopter said earlier this year that it also plans to establish a U.S.-based assembly facility and hopes to begin construction on that facility next year. The Swiss helicopter start-up is aiming for EASA certification in 2019 and FAA validation in 2020.

The SH09 is powered by a single 1,020-shp Honeywell HTS900 engine. Preliminary data indicates a maximum cruise speed of 140 knots and a maximum range of 430 nm. The retail price is expected to be close to $3.5 million.

# SH09 P3 begins flight trials

**28th November 2018 ; Shepard**

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Kopter Group has begun flight trails of its latest **SH09** prototype number 3 (P3) helicopter, the company announced on 22 November.

The commencement of flight trials marks the next phase of the helicopter's development and certification programme. P3 has achieved the necessary technical clearance and regulatory compliance to start the flight tests.

In its first flight, the aircraft flew from Mollis airfield in Switzerland for 40 minutes, carrying out a series of manoeuvres to obtain preliminary flight data, validating test design features and evaluating flight qualities.

While P3 will continue the development of the SH09 by performing an intensive flight test campaign in Sicily (Pozzallo, Province of Ragusa), the Kopter team is finalising the preparation of the next prototype, PS4, which will join P3 in 2019 to undertake flight testing in Sicily.

P3 incorporates several improvements and modifications based on feedback results from the testing of Kopter prototypes 1 and 2.

# «Unsere Helikopter werden auf der ganzen Welt fliegen!»

27 November 2018 ; Suedostschweiz

Bei der Kopter Group AG läuft alles nach Plan: An der Gemeindeversammlung hat sie grünes Licht für den Bau weiterer Hallen erhalten. Und am vergangenen Donnerstag hat der dritte Helikopter-Prototyp P3 seine ersten Flugversuche gemeistert.

# Kopter avanza en el desarrollo y certificación de su helicóptero SH09

25 noviembre 2018 ; Avion Revue

Kopter Group AG (Kopter) ha comenzado la siguiente fase de su programa de desarrollo y certificación de helicópteros con su último prototipo del SH09 número 3 (P3).

El P3 ha logrado la aprobación técnica necesaria y el cumplimiento normativo para iniciar las pruebas de vuelo. Diseñado en Suiza y montado en las instalaciones de del fabricante en el aeródromo de Mollis, incorpora varias mejoras y modificaciones basadas  en el feedback de las pruebas con los prototipos 1 y 2.

El P3 voló desde el aeródromo de Mollis durante 40 minutos y completó con éxito su primer programa de pruebas de vuelo, que incluyó una serie de maniobras destinadas a obtener datos de vuelo preliminares, validar las características del diseño de la prueba y evaluar las calidades de vuelo.

Mientras que el P3 continuará el desarrollo del SH09 realizando una campaña de pruebas de vuelo intensiva en Sicilia (Pozzallo, Provincia de Ragusa), el equipo Kopter en Mollis finalizará la preparación del próximo prototipo, el Pre-Series número 4 (PS4), que se unirá al P3 en 2019 para llevar a cabo pruebas de vuelo en Sicilia.

# Grünes Licht für Kopter

Die Stimmbürger von Glarus Nord sagen ja zur Umzonung und zur Abgabe von Bauland.

Samstag, 24. November 2018, Suedostschweiz

Zwei Geschäfte zum Flugplatz Mollis sind von der Gemeindeversammlung Glarus Nord ohne Opposition angenommen worden.

Überraschend ohne jegliche Opposition haben gestern Abend die beiden Geschäfte zum Flugplatz Mollis die Gemeindeversammlung von Glarus Nord passiert. Damit werden erstens sechs Hektaren Boden östlich der Piste von der Landwirtschafts- in die Industriezone umgeteilt. Darauf wollen die Rettungsflugwacht, die Heli Linth, die Flugschule Ecoflight und vor allem die Helibauerin Kopter neue Hallen bauen. Und zweitens erhält die Firma Kopter 1,8 Hektaren Boden im Baurecht für den Aufbau ihrer Produktion.

## GPK im Regen stehen gelassen

Gegen die Umzonung hatte sich vor der Gemeindeversammlung die Geschäftsprüfungskommission (GPK) ausgesprochen. Sie wollte erst in zwei Jahren mit der Zweitauflage der Nutzungsplanung der Gemeinde darüber befinden. An der Versammlung von gestern äusserte sich die GPK dazu aber nicht mehr. Ein kleines Scharmützel am Rande des Geschäftes zur Bodenabgabe zeigte dann, dass sich die GPK mit ihrer Stellungnahme wohl wenig Freunde geschaffen hat. GPK-Präsident Fridolin Staub beantragte, der Baurechtsvertrag sei noch einmal der GPK zur Prüfung zu unterbreiten. Eine klare Mehrheit der Versammlung wollte von diesem an sich harmlosen Ansinnen aber nichts wissen. Gegen Staub hatte Max Eberle aus Näfels nur ins Feld führen müssen, die Prüfung des Vertrages sei Sache des Gemeinderates.

Ebenfalls ohne Opposition haben die gegen 500 Stimmbürger den Beitrag an die neue Tourismusvermarktungs-Gesellschaft «Visit Glarnerland» und den Neubau eines Schulhauses in Niederurnen gutgeheissen.

## Der Waldkindergarten bleibt

Gegen das Ansinnen des Gemeinderates bleibt der Betrag für den Waldkindergarten im Budget. Die Versammlung folgte damit knapp einem Antrag von Eltern. Keinen Erfolg hatte dagegen die SVP mit dem Antrag, die Steuererhöhung zu halbieren. Die Steuern steigen nun um zwei Prozentpunkte.

# SH09 latest prototype begins flight trials

Vertical Magazine ; November 22, 2018

Kopter Group AG has commenced the next phase of its helicopter development and certification program with its latest SH09 prototype number 3 (P3).

P3 has achieved the necessary technical clearance and regulatory compliance to start flight tests. Designed in Switzerland and assembled at the Kopter facility at Mollis airfield, it incorporates several improvements and modifications based on feedback resulting from the testing of Kopter prototypes 1 and 2.

P3 flew from Mollis airfield for 40 minutes and successfully completed its first flight test schedule, which included a series of maneuvers aimed to obtaining preliminary flight data, validating test design features and evaluating flight qualities.

“P3 demonstrated excellent handling characteristics today, I expect Kopter to make rapid progress in development of the SH09,” said Richard Trueman, Kopter’s chief test pilot, after the flight.

Kopter’s chief technical officer and head of flight operations, Michele Riccobono, was on board P3 on Nov. 22 together with Adam Reynolds, Kopter’s chief flight test engineer. Riccobono said: “I am very pleased with P3. The Kopter design team has developed this latest SH09 to bring forward Kopter development and certification activity over the coming months; with P3, we have a key tool for this task.”

While P3 will continue the development of the SH09 by performing an intensive flight test campaign in Sicily (Pozzallo, Province of Ragusa), the Kopter team in Mollis will finalize the preparation of the next prototype, the Pre-Series number 4 (PS4), which will join P3 in 2019 to undertake flight testing in Sicily.

In addition to its essential contribution to the development aircraft, the Mollis team will set its future focus on upgrading the existing facility into a fully operational commercial production center.

“I am proud of the Kopter team and its ability to develop the next-generation single engine rotorcraft,” said Andreas Lowenstein, Kopter’s chief executive officer. “With P3 we are set on the path towards delivery to our customers.”

He added: “We have seen a tremendous response from the market for the SH09, which offers the highest standards of safety, mission capability and cost efficiency, which our customers are asking for.”

# Neue Aufträge für Kopter

## 25.10.2018 - Jürgen Schelling - Cockpit

Der Turbinenhubschrauber von Kopter aus Wetzikon präsentierte sich auf der Heli-Tech Amsterdam erfolgreich. Das Unternehmen ist mit neuen Bestellungen nach Hause zurückgekehrt.

Der Hersteller Kopter mit der Zentrale in Wetzikon sowie Produktionsstätten in Mollis und Näfels, früher bekannt unter dem Namen Marenco Swisshelikopter, hat sich mit dem Einturbinen-Helikopter SH09 viel vorgenommen. Die Maschine soll als Passagierversion, für Aussenlasteinsätze, zur Überwachung oder bei Rettungsflügen eingesetzt werden können.

## SH09 in Malaysia und Skandinavien

Mitte Oktober wurden auf der Messe Heli-Tech in Amsterdam neue Aufträge eingeholt: Die Firma SAS aus Malaysia bestellte einen SH09 in Passagierversion, der zukünftig am Flughafen Kuala Lumpur stationiert sein soll. Ausserdem gab es weitere Bestellungen aus Skandinavien. Noch dauert es bis zur Auslieferung dieser und weiterer fest bestellter Maschinen aber wohl einige Zeit: Der SH09 hat noch keine Luftfahrtzulassung der europäischen Luftfahrtbehörde EASA. Erst danach können in Europa die ersten Heli ausgeliefert werden. 2019 könnte die Zulassung klappen, ebenso auch jene der US-Luftfahrtbehörde FAA.

Der SH09 wird von einer Honeywell-HS900-Turbine mit 1020 PS angetrieben. Maximal sieben Passagiere und ein Pilot passen in den neuen Helikopter. Bis zu 140 Knoten schnell und etwa 430 NM weit soll er fliegen können. Der SH09 konkurriert mit dem Airbus Helicopter H130T2, der Bell 407 und dem AW119Kx von Leonardo in der 2,5-Tonnen-Klasse.

# Schweizer Heli-Hersteller erhält Asien-Auftrag

## 23/10/2018 - Neue Zürcher Zeitung

Der neue Turbinenhubschrauber von Kopter aus Wetzikon hat zwar noch keine Luftfahrtzulassung, kann aber eine neue Bestellung aus Asien aufweisen.

Jürgen Schelling, 23.10.2018,

So könnte der Kopter SH09 in der Lackierung der malaysischen Firma Systematic Aviation Services (SAS) aussehen. (Bild: PD)

Es war und ist ein äusserst ambitioniertes Vorhaben: Im Hochlohnland Schweiz quasi aus dem Nichts eine Helikopterfertigung aus dem Boden zu stampfen. Und das, obwohl ein Turbinenhubschrauber zu den kompliziertesten Luftfahrzeugen überhaupt zählt. So benötigt er einen aufwendig konstruierten Rotorkopf, dazu ein Getriebe sowohl für den Haupt- als auch den gekapselten Heckrotor, das ganze technische Ensemble soll für den Piloten dabei mit harmonischen sowie präzisen Flugeigenschaften zu steuern sein. Das allein ist schon ehrgeizig genug. Erst recht allerdings, wenn dem 2007 gegründeten Schweizer Newcomer Wettbewerber mit jahrzehntelanger Erfahrung gegenüber stehen.

Die Firma Kopter mit der Zentrale in Wetzikon sowie Produktionsstätten in Mollis und Näfels, früher bekannt unter dem ursprünglichen Namen Marenco Swisshelikopter, hat sich also mit ihrem Erstling, dem Einturbinen-Hubschrauber SH09, in der sogenannten 2,5-Tonnen-Klasse Einiges vorgenommen. Die Maschine soll mit geringem Gewicht, besserer Leistung in der Höhe und mehr Speed sowie üppiger Rundumsicht und günstigeren Betriebskosten gegenüber der Konkurrenz nicht nur mithalten, sondern sie möglichst überholen. Sie soll als Passagierversion, für Aussenlasteinsätze, zur Überwachung oder bei Rettungsflügen eingesetzt werden können.

Kopter baut die industrielle Fertigung des ersten Schweizer Helikopters auf
Christoph G. Schmutz, Mollis 2.2.2018, 06:30

Jetzt wurde auf einer Helikopter-Messe in Amsterdam ein neuer Auftrag aus Asien eingeholt: Die Firma SAS aus Malaysia bestellte einen SH09 in Passagierversion, der zukünftig am Flughafen von Kuala Lumpur stationiert und vor allem touristische Flüge absolvieren soll.

Noch dauert es bis zur Auslieferung dieser und weiterer fest bestellter Maschinen aber wohl einige Zeit: Der SH09 hat noch keine Luftfahrtzulassung der europäischen Luftfahrtbehörde EASA. Erst danach können in Europa die ersten Heli ausgeliefert werden. 2019 soll die Zulassung klappen, für die derzeit vor allem der dritte Prototyp der Maschine im Einsatz ist. Angestrebt wird in Wetzikon parallel

dazu die nordamerikanische Zulassung durch die US-Luftfahrtbehörde FAA.

Der SH09 wird von einer Honeywell-HS900-Turbine mit 1020 PS angetrieben. Maximal sieben Passagiere und ein Pilot passen in den neuen Helikopter. Grosszügige Sichtverhältnisse für alle an Bord sollen ihn auszeichnen, die Verwendung vieler Carbon-Komponenten sorgen laut dem Hersteller für geringes Gewicht und damit günstigen Verbrauch. Bis zu 260 km/h schnell und maximal 800 Kilometer weit soll der SH09 fliegen können.

7 BILDER

In Mollis in Glarus baut die Firma Kopter die industrielle Fertigung für den Hubschrauber SH09 auf. Bereits fertiggestellt sind zwei Prototypen.
Der Prototyp 2, der auch Chantal genannt wird, steht in der nagelneuen Halle in Mollis.
Der SH09 muss sich allerdings auch etablierten Konkurrenten stellen. Weltmarktführer Airbus

Helicopter, früher unter dem Namen Eurocopter bekannt, hat ebenfalls Einturbinenhubschrauber im Programm. Der amerikanische Weltmarkt-Vize Bell Helicopter war früher durch sein Modell Jet Ranger berühmt. Bell hat ebenfalls einen Einturbinenheli für bis zu sieben Personen im Programm. Auch das italienische Unternehmen Leonardo, dessen Helikopter vom Typ Agusta in der Schweiz vor allem durch die Rega bekannt sind, hat einen ähnlich starken Einturbinen-Helikopter in der 2,5-Tonnen-Klasse wie die SH09 im Angebot.

Es wird also möglicherweise kein leichtes Unterfangen für Kopter, als Herausforderer auf einem umkämpften Markt zu punkten. Sind die eidgenössischen Helikopter in Europa erst einmal zugelassen, wollen auch Schweizer Luftfahrtunternehmen wie etwa Air Zermatt den SH09 in Betrieb nehmen, da der neue Heli vor allem für sogenannte «Hot and High»-Einsätze, also in grossen Höhen wie in den Alpen und bei hohen Temperaturen geeignet sein soll.

AMTC 2018: Kopter's SH09 perfectly suited for Helicopter Emergency Medical Services

**20 oct 2018 – 50skyshades**

**Kopter is very pleased to showcase its SH09 helicopter in HEMS configuration at the Air Medical Transport Conference (AMTC) in Phoenix, AZ, October 22-24th. The SH09 stands out as a new generation, single turbine helicopter with safety, cost efficiency and mission capability above and beyond known standards. Aspects that are all critical to any air medical transport mission today.**

**Central to any EMS helicopter is the fitting and customization that provide the medical crews with unobstructed full patient body access and the inclusion of dedicated, and sometimes bulky medical equipment needed to aid and save lives. To design, create and offer this crucial medical interior, Kopter has collaborated with Metro Aviation located in Shreveport, Louisiana to fit the SH09 with a comprehensive and effective EMS interior.**

**Given that Kopter plans to certify a 4-Axis autopilot as the core of a Single-Pilot-IFR system, add cabin-volume space that can only be found in larger light and intermediate twin-engine aircrafts and the SH09 will certainly merit central casting as a Game changer. A central piece of the SPIFR/autopilot capability is the new Garmin G3000H avionics suite. This modern and latest generation of avionics deck will significantly reduce pilot workload, increase pilot situational awareness and boost the aircraft operational safety margins. To benefit operators and owners alike, the G3000H will be part of the standard baseline offered with the helicopter, ensuring that the SH09 provides the highest level of avionics capability and functionality in the market. The SH09 will feature dual landscape-oriented displays and a single touchscreen controller.**

Additional unique features of the SH09 include a very high set tail-boom which allows for person(s) in the range of 6' tall to walk under the tail-boom at the rear clam-shell loading area without the need to bend over or remove any flight headgear. This large unobstructed ingress provides for efficient patient loading and offloading, to include very large patients and the required electrical or hydraulic mechanism to facilitate their movement.

The SH09 comes standard with large sliding cabin doors both port and starboard which offer yet more options for loading and off-loading crews and/or patients. Additionally, the cabin floor in the SH09 has been designed to be modular in that it does substantiate as a structural component and as such can be replaced as needed with the flooring required by customers.

Kopter North America President of Sales, Marketing and Customer Support, Larry Roberts, encapsulates the SH09 Program as follows: "In more than 20 years in this industry I have seldom seen such a dedicated certification process for a helicopter that clearly brings so much to the table for our customers, their customers and to all the future patients to be served with the support of a Kopter SH09 aircraft. We are convinced that our helicopter will be an important tool for medical crews but also a vital element for those patients in need of airborne medical services."

# Kopter SH09 'a couple of weeks' from third prototype flights

**Posted on October 18, 2018 by Oliver Johnson – Vertical Magazine**

Swiss manufacturer Kopter has revealed it will begin flight testing the third prototype (P3) of its SH09 light single aircraft in "a couple of weeks," with a target certification by the end of 2019 still in sight.

In a wide-ranging media briefing ahead of Helitech International 2018 in Amsterdam, the Netherlands, Kopter CEO Andreas Loewenstein and CTO Michele Riccobono confirmed the aircraft will complete about two weeks' worth of flights at its test and production facility in Mollis, Switzerland. The flight test campaign will then move to Sicily during the Swiss winter.

Both P3 and the fourth prototype/pre-serial aircraft (PS4) will be used to complete the type's certification flights. PS4 will be "fully representative" of the production aircraft, said Riccobono, incorporating the Garmin G3000H avionics it announced it was switching to in May 2018.

Another difference between P3 and PS4 is the type of carbon fiber used in the construction of the airframe, with the type used in PS4 providing enhanced durability.

Having solved an issue with a main gearbox component that had delayed the type's development by about six months, Kopter is currently completing an extensive ground testing campaign with P3.

"We have already around 20 final hours where we tested all the different systems — including pulling some power to test the flight controls, hydraulics, blades, [and] assessing all the loads," said Riccobono.

While it completes P3's ground tests, Kopter is also working with the European Aviation Safety Agency (EASA) to clear the way for the aircraft to begin flight tests.

PS4 was originally due to join the flight test campaign by the end of 2018, but with the delays in preparing P3 for flight, it is now scheduled to do so by the end of the second quarter of 2019. This is to enable the manufacturer to gather data from P3's early flight tests before it freezes PS4's design, said Riccobono.

"We have a couple of points [on which] I need some answers from P3," he said. "Some systems may need some tweaking, and then before certification we [will] put the same systems on the two aircraft so that they will run in parallel.

**Making moves at Helitech**

Kopter now has 65 orders and about 100 letters of intent for the SH09, which is pitched as providing the cost benefit of a single-engine aircraft with a cabin the size of a light twin-engine aircraft — enabling it to accommodate up to seven passengers. It also incorporates some of the most modern technologies and materials available.

The manufacturer brought the aircraft to Helitech in the form of its first prototype, which was presented in the livery of new customer Systematic Aviation Services (SAS), based in Kuala Lumpur, Malaysia.

Kopter has secured a number of bookings in Asia, but the newly-announced deal marks a debut for the aircraft in Malaysia.

"[It's] an important order because the Malaysian market is quite dynamic market, and they are one of the dynamic actors in this market," said Loewenstein. "So, we consider that this is a good first step into this market."

Kopter believes orders from customers in Asia — excluding China — will account for about a quarter of its total sales, with tourism and passenger transport flights in the region likely to grow substantially. This belief doesn't appear misplaced, given that the region already represents a quarter of the SH09's order book.

Loewenstein said he was happy with the overall balance of the book, which he said represents "exactly the distribution of the global [civil helicopter] fleet." That balance is also reflected in the spread of orders per operating sector for light singles — across tourism, utility, law enforcement and emergency medical services (EMS). Mock-ups of the aircraft in EMS and law enforcement configurations were brought to the Heli-Expo and APSCON tradeshows, respectively, earlier this year in partnership with Shreveport, Louisiana-based Metro Aviation.

"[The order book] shows, to me at least, that this aircraft is really suitable for all the mission types we are targeting," said Loewenstein. "So, it's a true multi-mission aircraft which is fulfilling the requirements in all the areas where we targeted."

Helitech also saw Kopter record a bumper order from Swiss Helikopter Norway AS for four SH09s. The newly-formed company, a spinoff from Helitrans with the same shareholders, was named Kopter's Nordic distributor (covering Denmark, Norway, Sweden, Finland, Iceland and Greenland), and its founders said they expect the aircraft will mostly fill a need in sling load operations. The aircraft are scheduled for delivery in 2021-22.

The company is Kopter's eighth distributor in a fast-growing network that the manufacturer hopes to ultimately expand to "double digits," said Loewenstein. The network already spans Australia and New Zealand, Japan, Central America, South Africa, Eastern Europe and Northern Europe. "Our sales philosophy is that we will rely heavily on distributors for single orders," he said. "We will cover, ourselves, major fleet customers, and we will have [the ability] to cover military or paramilitary business ourselves."

In parallel to the expansion of its distributor network, Kopter is busily developing its product support program, which involves the establishment of a core team at the manufacturer's headquarters as well as the deployment of service centers around the globe. Many of the distributors are likely to also serve as service centers.

As part of its efforts to build its support program, Kopter is building what it says is an "extensive" training services offering together with "recognized, international" partners. Loewenstein ruled out using a simulator for training at the beginning of the program, but promised "innovative approaches" that would be revealed next year.

**A gradual production ramp up**

The orders Kopter has received to date almost cover the first three years of production, with the manufacturer planning to "gear up quite slowly" when it begins deliveries of the SH09 — scheduled for "just after" certification is secured in the first quarter of 2020.

Four aircraft will be produced in the first year, 18 in the second, and 44 in the third. Beyond that, it aims to reach "triple digit" numbers at its production line each year, said Loewenstein. "The cruising speed would be somewhere between 170 and 220," he added, saying the likely limiting factor for deliveries would be Kopter's capacity to produce more, rather than a lack of demand.

The building for the final assembly line in Mollis has been completed, and Kopter is now in the planning and authorization process for its final pre-assembly and manufacturing building; Loewenstein said there is a "high probability" this will also be in Mollis.

The manufacturer had previously announced the creation of a U.S. subsidiary, Kopter North America, which will focus on boosting the aircraft's presence in that key market. North America is expected to provide close to 50 percent of the aircraft's sales.

The subsidiary will also have a final assembly line, with the site to be selected within the next six months. A third final assembly line is planned for Asia. Production of all dynamic components will remain in Switzerland, said Loewenstein.

In the meantime, the company has been busily growing in size to accommodate the change from prototype designer to airframe manufacturer. It now has almost 300 staff, many of whom have joined the company having gained vast experience across the helicopter industry.

“We’ve united quite an interesting team, and all these ladies and guys [are] bringing innovative ideas,” he said.

Kopter’s production facilities will be kept lean, with an estimated 250 to 300 staff to be added in Switzerland over the next three years as manufacturing ramps up.

“This is a great window of opportunity for this product at the moment, and I think this is very motivating for the team,” said Loewenstein.

Loewenstein hopes to utilize the expertise of Kopter’s growing team as the manufacturer begins to plan beyond the SH09, with a previously stated aim of becoming one of the top three civil helicopter manufacturers.

“When you have one helicopter and you have established a great team of people who have done it, it would be a pity not to use this knowledge and to use this dynamic in order to get one step further,” said Loewenstein. “You cannot stay a little niche player in the corner. . . . If you want to be sustainable, then you have to have more than one product at this scale.”

# Kopter recovering from supplier-driven delay

## Flightglobal – 17/10/18

Switzerland-based Kopter will fly the third prototype of its SH09 light-single by the end of October, as the manufacturer looks to recover from a supplier-driven programme delay.

Kopter – which rebranded from Marenco Swisshelicopter in March – had previously planned to fly aircraft P3 in March 2018.

However, ultrasonic and x-ray inspections of cast gearbox housings produced by a now-axed supplier revealed the components had not been manufactured to a safe standard, delaying final assembly of the flight-test article, executive vice-president technology Michele Riccobono said at the Helitech show in Amsterdam on 16 October.

Although the company immediately switched to another supplier, waiting for a new part to be produced would have involved a "lead time of years, not months", says chief executive Andreas Löwenstein.

Instead, Kopter reworked the component and carried out structural testing, advising the European Aviation Safety Agency of the move. Feedback from the agency was received in earlier this month, clearing the aircraft for flight "by the end of October".

"They were extremely pleased with what we have done from a safety standpoint," says Löwenstein.

The affected component will eventually be swapped for a part sourced from the new supplier.

Once aircraft P3 has completed 20-50h of flights from Kopter's manufacturing site in Mollis, Switzerland, it will be transferred to Pozzallo, in Sicily. By the end of the second quarter of 2019 it will be joined by the first pre-serial SH09, also known as aircraft PS4.

Certification is scheduled for the end of next year, with service entry likely to follow in early 2020.

"We will start [serial] production in the first semester of [2019] so that we will be able to deliver the first aircraft just after certification," says Löwenstein.

Output will be set at around 10-15 aircraft in the first year, says Löwenstein. Although the first three years of production are largely sold out, there are still a number of early positions reserved for potential marquee customers, he adds.

So far, performance of the Honeywell HTS900-powered SH09 is more than achieving target, says Riccobono. Maximum take-off weight is currently set at 2.6t, and while this could theoretically be increased, it would only be done to "protect or increase payload", he says.

Kopter announced at a Helitech an order for a single SH09 from Malaysian operator Systematic Aviation Services.

## Kopter announces new distributor for Nordic countries together with new SH09 order

**Posted on October 17 2018, Vertical Magazine**

Kopter has announced the appointment of Swiss Helikopter Norway AS as its Nordic distributor, on the second day of Helitech International.

Swiss Helikopter Norway AS will act as distributor of the SH09 helicopter in Scandinavia, Finland, Iceland and Greenland.

In order to maintain available SH09 delivery slots for the region and considering the ramp-up of firm orders, Swiss Helikopter Norway AS confirmed its commitment and positive outlook for the region by securing a firm order for four SH09 helicopters.

These four pre-ordered SH09s will be made available to the market, starting in 2021. Swiss Helikopter Norway AS will be supported technically by Helitrans AS, a Norwegian operator that was announced earlier this year at Heli-Expo in Las Vegas, Nevada, as launch customer for the SH09 after ordering 12 units and six options of the Swiss-made single-turbine helicopter

# Kopter Shows SH09 at Helitech

**by Jon Lake**

**OCTOBER 17, 2018 – AIN Online**

The first prototype of the Swiss-built Kopter SH09, which made its maiden flight on Oct. 2, 2014, is among the nine helicopters on display at Helitech. The model on display wears the red-and-white livery of the newest customer, Malaysia's Systematic Aviation Services (SAS), which operates from Kuala Lumpur's Sultan Abdul Aziz Shah Airport. Designed by pilot and engineer Martin Stucki, the Kopter SH09 reflected its creator's frustration with legacy single-engined helicopter designs and their often poorly designed cockpits. Stucki conducted market research that indicated a viable market for a new 2.5-tonne helicopter and in 2007 he formed Marenco Swiss Helicopter (later renamed Kopter) to develop what he claimed would be the first all-new light single-engine turbine helicopter for decades.

The resulting SH09 is a single-engine turbine-powered light helicopter of all-carbon composite airframe construction, powered by a single Honeywell HTS900 turboshaft engine, with a new-generation dual-channel Fadec. The aircraft features a low-noise shrouded fenestron tail rotor and a five-blade bearingless main rotor.

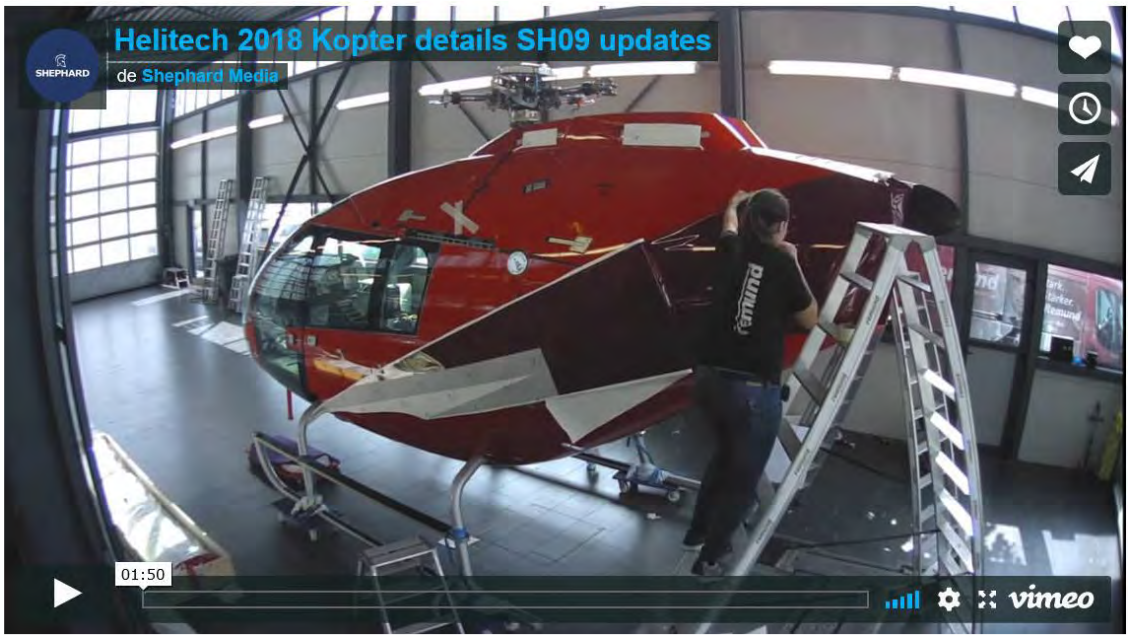
The cabin was designed to offer in a single-engine model the volume usually found in a medium-sized twin-engine helicopter. This was achieved, in part, through the use of three Kevlar-threaded crashworthy fuel tanks, built into the walls and floor of the cargo hold. The aircraft has a two-pilot Sagem ICDS-8A glass cockpit, while the main cabin seats four passengers (seven in an optional high-density configuration). It is equipped with a rear clamshell door under the high-mounted tail boom to facilitate air ambulance operations.

A second prototype joined the flight test effort on Febr. 26, 2016. Certification flying will switch from Switzerland to Italy, where the third prototype will be joined by a fourth aircraft early in 2019, leading to EASA certification during the second half of 2019.

Swiss operator Air Zermatt is the launch customer for the type, and Kopter holds orders for 26 of the SH09.

# Helitech 2018: Kopter details SH09 updates (video)

**16th October 2018 - Shephard**




Kopter Group took the opportunity to showcase its prototype SH09 helicopter at Helitech International at the RAI in Amsterdam, liveried in colours of its delivery customer, Systematic Aviation Services of Malaysia.

Speaking to *Shephard* prior to the start of the show, Andreas Loewenstein disclosed the latest status of the programme and both current and future opportunities in the civil rotorcraft market.

The single-engine H125, part of the Squirrel portfolio, has accumulated more than 32 million flight hours worldwide. (Photo: Airbus Helicopters)

# Happily single

The single-engine helicopter is a versatile platform that can be utilised for an extensive variety of missions, including training, law enforcement and EMS, to name a few. As such, OEMS are continuously pushing innovation of this aircraft type in the civil sector. **By Helen Haxell**

**The single-engine market is being invigorated by the introduction of upgraded and next-generation platforms by both new and existing manufacturers. This is providing zest and healthy competition to excite a sector which has been too long in the doldrums of the oil and gas price downturn.**

As testing efforts ramp up to meet certification requirements, the light single-engine market is spoilt for choice.

## Old guard

Although Enstrom Helicopter Corporation is niche in its role within the single-engine market, the US-based company has become a major player that is seeing a lot of interest in its offerings, particularly from Eastern Europe.

Six Enstrom 480B-G aircraft are in the process of being delivered to the Czech Republic.

The four military and two civilian rotorcraft will replace a similar number of Russian Helicopters Mil Mi-2s that Lom Praha's flight training centre has been using since it was set up in 2004 to train Czech Air Force personnel.

The civil-registered platforms will enable Lom Praha to carry out more general flying training missions while avoiding the restrictions that are placed on military helicopter operations.

Dennis Martin, director of sales and marketing at Enstrom Helicopter, explained to *Helitech International Daily News* that this deal is creating interest in the OEM's portfolio across the European region.

'We're just finishing up delivery of six aircraft to the Czech Republic, four of which are going to the Czech Army. That's creating quite a lot of buzz in the region. A lot of people are taking a new look at the 480. We've also sold a new 280 to France – the first we've sold there in quite a while,' he said.

'We're starting to see more and more interest out of Europe, and these things tend to build and multiply. For a while, that market was pretty quiet for us, but it's becoming more and more of a focus for Enstrom,' Martin added.

One of the major focuses for the manufacturer is its next-generation platform, the TH-180, a twin-seat helicopter aimed at the training market. The first of the type flew in 2015, but Enstrom suffered a setback when a prototype crashed in February 2016.

The company has been relatively tight lipped on its progress with certification, although Martin confirmed that testing is now under way. Noise and structural testing took place in August.

Whilst Martin was firm that there is no third prototype planned, he did share that Enstrom is happy with the current two TH-180s. 'We had four [examples, including]

This year, the Leonardo AW119Kx has been delivered to Chile, South Africa and the US. (Photo: Leonardo Helicopters)

The Bell 505 Jet Ranger X is a derivative of the OEM's 206L-4 LongRanger. (Photo: Bell)

The twin-seat TH180 helicopter is aimed at the training market. (Photo: Enstrom Helicopter)

"Here in Europe, I think people are watching the helicopter because they see that after 40 years of alternative offers, something new is coming."

one proof of concept, which has been retired, and one which was damaged in the incident. The two [remaining aircraft] should cover all our requirements,' he said.

## New player

Another manufacturer in the throes of its testing and certification programme is Kopter, with its SH09.

The single-engine turbine helicopter is claimed by the OEM to be the only rotorcraft in its weight category to combine a full-composite fuselage, bearing-free rotor system with five blades, an electronically governed engine and a glass cockpit.

With more than 26 global orders spanning the Americas, Europe and now Africa – two are soon to be delivered to South Africa – prospects are looking fruitful.

However, the company's CEO, Andreas Löwenstein, told *Helitech International Daily News* that the platform has the potential to impact the leasing market in the European region in particular. 'Here in Europe, I think people are watching the helicopter because they see that after 40 years of alternative offers, something new is coming,' he said. 'So, it's difficult to say today what kind of effect this will create on the market, but there are [different] elements.

'We are told by leasing operators, for instance, that they see that our helicopter will be impacting residual values of the existing fleets and that this might lead to major switches,' he explained.

During September this year, prototype three was in the middle of conducting ground runs, and Löwenstein had expectations that it would be flying before the middle of October.

This comes after the test phase of the SH09 was delayed by three months in May, following the discovery of a quality-assurance issue with a dynamic component.

Addressing this, Löwenstein said: 'We have resolved our dynamic component issue. The way we have done it is very simple: We have totally changed the supplier. I will not accept suppliers who are not delivering what we expect in terms of quality. We have shown this clearly in this case; the supplier was changed overnight.'

Similar to Enstrom, Kopter remains tight-lipped on scheduled dates after the impact of delays to testing programmes, but Löwenstein offered: 'What I can say today is that we are still on track. I do not expect major slippage, major problems, to come.

'We might lose some weeks or months here and there in the development process, so this is always possible, but the company's target is still to get the [SH09] certification before the end of 2019,' he confirmed.

## The majors

Major OEMs like Airbus, Bell and Leonardo continue to diversify their portfolios across helicopter sizes and types, but still have strong footprints in the single-engine sphere.

Two of Airbus' global successes in this field are the H125 and H130. Both models are equipped with a Safran Arriel 2D engine, including triple-engine control with a dual-channel FADEC unit, and a third independent and automatic back-up channel for automatic start-up sequences and engine handling.

According to company literature, over 1,000 Arriel 2D-equipped H125 and H130

helicopters are in service worldwide, and have collectively logged over 1 million flight hours.

David Prevor, senior marketing executive at Airbus Helicopters, laid out the global catchment of the respective helicopters to *Helitech International Daily News*: 'In 2017, we achieved 71% market share in this category [single-engine], with both the H125 and H130. The situation is not so different in Europe; we are dominant as well.'

Prevor explained that the reason for this 'dominance' is that the H125 is particularly adept at performing aerial work, public services and passenger transportation missions, whilst the H130 is more geared towards private aviation and tourism.

He also pointed out that the H125's cost-effectiveness was significant when compared with competitors like the Bell 407. 'We are 13% cheaper than a Bell 407 in terms of operational costs. If you want to transport, let's say, 1t of payload, it will cost you 13% less than the Bell 407. Performance and [extra payload] of the H125 are the key selling factors,' Prevor explained.

## Flying the flag

The Bell 407 is relatively omnipresent, with strongholds in Asia-Pacific, Europe and South Africa.

The 407 is the flagship aircraft for Bell's service provider, NAC Helicopter Operations, in South Africa. This is largely due to the platform's speed and seat capacity, as well as the available support offered by the OEM, said Alister Brown, division head and partner at NAC.

Throughout Africa, the type has been used for roles such as border patrols and VIP transportation, as well as being utilised by private operators. 'We have four 407s waiting to go to Madagascar. They will be dispatched until the end of December and will be used for the [forthcoming] election [campaigns],' Brown commented.

**Orders for the SH09 are coming in from far and wide, from Guatemala to Norway. (Photo: Kopter)**

Turning to Leonardo, the company confirmed in April 2018 that highly competitive conditions and a 'low-margin market' were the main causes behind its decision to freeze the AW009 programme, although it still sees great prospects for its light single helicopters, particularly the AW119 variants.

The AW119Kx is the latest evolution of the AW119 single-engine helicopter. It features the Garmin G1000H glass integrated flight deck system and new avionics.

Although the platform is mainly operated outside of Europe, it is likely that Leonardo will seek opportunities within the region as the company narrows its focus on its single-engine portfolio.

Prototype P3 is currently in ground testing.

KOPTER

KOPTER

# THIRD SH09 PROTOTYPE SET TO FLY

THE SWISS HELICOPTER MANUFACTURER, KOPTER, WILL SOON BE FLYING ITS THIRD PROTOTYPE. THIS YEAR, KOPTER HAS INAUGURATED ITS ASSEMBLY FACILITY, EQUIPPED WITH THE TOOLING NEEDED TO START SERIES PRODUCTION, AND CREATED A SUBSIDIARY IN THE UNITED STATES.

P3, the third prototype of the Kopter SH09 (built by the Swiss firm formerly known as Marenco Swisshelicopter), in production configuration, is set to fly in the near future. Accoding to a Kopter: "We are currently doing all the necessary ground tests (overall system checks and ground resonance) to allow flights to start. This machine will be used to expand the flight envelope. This activity will validate the design enhancements introduced on PS4 and identify areas where further improvements are potentially needed to ensure compliance with certification requirements. Prototype P2 has been withdrawn from the flight test programme. It is expected to become the "tie-down helicopter" to carry out the endurance tests necessary to obtain certification. It will be a valuable tool in the future development of the SH09."

The assembly plant has been set up near Mollis , about 60km from Zurich. By 2022, this building should be producing 50 units per year of the single-engine helicopter designed by Swiss engineer Martin Stucki. "We are in the process of acquiring additional land in Mollis in order to be able to build the facilities that will allow us to support our production ramp-up. We are setting up the jigs and tooling to ensure the start of series production in the near future. We have also upgraded our supply chain and are currently drawing up framework contracts with each of the suppliers we have chosen to support us," says Kopter.

### KOPTER NORTH AMERICA..

In July this year, the Swiss helicopter manufacturer created a U.S. subsidiary, Kopter North America. It will be led by Christian Gras, who is also Vice President of Customer Services at Kopter AG, and Larry Roberts, President of Sales, Marketing and Customer Support. North America is the primary target market for the Swiss helicopter manufacturer. The SH09 has booked a total of 63 firm orders to date, in addition to approximately 130 commitments and letters of intent.

"The United States is clearly a major market for our single-engine helicopter. We already have firm orders from American customers. It is essential that we are able to produce these machines close to the area of operations," says Andreas Löwenstein, CEO of Kopter Group. The next step is to establish an industrial presence in the United States. Discussions are ongoing with potential industrial partners and local authorities regarding different possible locations with a view to starting U.S. production operations in the medium term.

Key features of the Kopter design include dual hydraulic and electrical systems. These systems are not intended to be certified since CS27 does not contain any regulatory requirement for this arrangement. The only element under consideration is the crashworthiness of the fuel tank and its connections. The aim is for Kopter to demonstrate that there will be no kerosene projections in the event of an accident, and that tank connections are sufficiently robust.

In terms of pilot safety, the aircraft is designed around a specific beam, one end of which is located just above the pilot's head. In the same vein, cabin side doors have been reinforced. The airframe is of all-composite construction, and one of Kopter's strengths has been to work with leading experts in this domain.

■ Antony Angrand.

## Kopter solves cast part issue, begins ground testing third SH09 prototype

## Posted on October 2, 2018 by Thierry Dubois – Vertical Magazine

Kopter is ground-testing the third prototype of the SH09 single-engine helicopter having solved a supplier issue with a main gearbox component, the company has revealed.

Prototype P3 is currently in a pre-flight test phase at the test and production facility of the fledgling manufacturer, formerly known as Marenco Swisshelicopter, in Mollis, Switzerland.

After one month of early flight trials in Mollis, some 300 flights will take place from Pozzallo, Sicily, where a team of 15 to 20 will be transferred. There, the flight test campaign will last 11 months, Michele Riccobono, chief technology officer, told *Vertical.*

Earlier in the aircraft's development, P3's flight test campaign had been scheduled to start by the end of March 2018. However, issues with a cast part – the main gearbox's upper housing – ultimately led to a six-month delay.

The part the initial supplier delivered suffered from sub-standard porosity and cracks. "Rework and structural testing were required to substantiate [that the part's] strength and fatigue life were adequate to support the initial flight-test phase," said Riccobono.

An additional quality flaw was then discovered on the same part. The casting process required some adjustments to be made by welding, but the supplier had used improper procedures, Riccobono explained.

Kopter then performed a set of static tests, up to ultimate load, on two different serial numbers of the same batch. It ran an additional 300-hour main gearbox endurance test to confirm the mechanical properties design engineers had assumed in their analysis. At the end of this additional test phase, the part was found strong enough to cope with the SH09's flight envelope and is being used on P3.

Nevertheless, a new supplier is replacing the initial one. The delivery of its first part is expected over the next few weeks and "will be retrofitted on to P3 at a later stage," the manufacturer said.

Kopter is focusing on maintainability with the in-construction SH09's "pre-series" PS4. The rotor head, main gearbox and hydraulic system have been made more maintenance-friendly, said Riccobono. A new pre-impregnated carbon fiber will better deal with aging, as it will absorb less humidity.

The manufacturer anticipates it will soon receive Garmin's first G3000H avionics suite, which was revealed last spring to be replacing the equipment provided by Safran. Kopter will rig-test it at its design office in Wetzikon.

# Adventures of Little Annie

**BY MARK MANSFIELD**

The world's most famous Antonov An-2, better known as 'Little Annie' – the plane with a big heart – is on a mission to spread love and hope to people in need and forms the backdrop for its owners to launch their book, *The Adventures of Little Annie*.

The book is based on the real adventures and travels of the Antonov An-2 as it criss-crosses the skies around southern Africa. The vision is to change people's lives positively by applying the age-old principle of "treating others as you would want them to treat you".

The Hill family, who own and operate Little Annie, fly around southern Africa and give underprivileged children the opportunity to experience the thrill of flying. Little Annie was donated out of love and flown all the way from Siberia, Russia, to join the Hills' Just Love mission.

Little Annie kindles hope in the hopeless and inspires belief that the impossible can be achieved, in line with one's talents. Hearing Little Annie's story and being afforded the opportunity to fly with her, it is hoped that a positive attitude will be nurtured and that love, joy and peace can be attained, benefiting all.

The book can be purchased for ZAR50 a copy at the static display – just look for the world's biggest single-engine biplane on display in the static area. ■

# Kopter zooms in from Switzerland

For rotorcraft operators and enthusiasts, South Africa-based Safomar Aviation (Chalets 18 to 19) has interesting news: it is bringing the Swiss-built Kopter SH09 to South Africa, the company announced this week at AAD.

Safomar said the Kopter SH09 was designed for multiple missions, including military and law enforcement operations, medical and rescue, passenger transport and utility.

With a cruise speed of 260km/h (140kts), it is one of the fastest helicopters in its category (2.5-ton class), boasting outstanding hot-and-high performance and a low noise signature, both inside and out, thanks to the newly developed dynamic assembly and shrouded tail-rotor. Its airframe is entirely composed of carbon composite materials.

According to Safomar Aviation, the SH09 provides high levels of comfort, combined with low operating costs and the highest in safety standards. It has a long range in excess of 800km (430 nautical miles) with standard fuel tanks.

The modularity of the cabin makes the most of the flat floor and high ceiling concept. With a capacity of up to seven passengers carrying up to 10 suitcases, it offers multiple seating arrangements with between five and eight individual crashworthy seats. Rear access loading is through the clamshell doors for cargo and medical stretchers.

The Safomar Group was established in 1987 to offer aviation and industrial products and services in South Africa and across sub-Saharan Africa, where it has 10 facilities. The company serves commercial, military, corporate and general aviation customers with a full spectrum of aviation-related solutions across multiple platforms, including UAVs, through its subsidiaries.

Its Mega Aero Training Academy trains students from all over the African continent, including cabin and flight crew training conducted on a static fully equipped Boeing 737 aircraft. ■

# For all your offshore needs

Mvano Naval Systems (Hangar 3, Stand W4) offers complete solutions with respect to proven naval equipment and systems for navigation, internal communications, Global Maritime Distress and Safety System communications, naval command and control, radar systems, Warship Electronic Chart Display and Information System, EOS, automation, alarm monitoring and control systems, and electrical systems.

This is made possible through the company's alliances with premium manufacturers and service providers, such as Raytheon Anschütz, iXblue, Zenitel (Vingtor-Stentofon), Cobham Sailor, Praxis Automation Technology, KVH, Terma, Teledyne Marine and RTsys. These companies all have proven track records with regard to naval equipment and systems already in service with navies around the world. Mvano Naval Systems' services include local integration, installation and commissioning, as well as training, after-sales support and logistics support.

Mvano Naval Systems is a joint venture company that is owned 51 per cent by Mvano Marine and 49 per cent by Dynamic Marine Systems. Mvano Marine is a proudly 100 per cent black-owned company (BBBEE Level 1) that supports, services and maintains all marine technology. It promotes preventative maintenance programmes within its service agreements, offering customers greater reliability and efficiency.

Dynamic Marine Systems is a specialist sales, rental and support company serving the maritime market around Africa. Its team of qualified service engineers can supply expert support to offshore vessels anywhere in the world.

Its speciality is dynamic positioning (DP) and automation, but it also covers navigation, communication, electrical/power management, automation, engineering and other onboard systems. All Dynamic Marine Systems engineers are qualified to perform all mandatory and industry-required DP surveys and audits, such as annual trials, failure mode and effects analysis verification, assurance audits, GAP analysis, DP operations manuals, DP incident investigations, well as Oil Companies International Marine Forum-accredited Offshore Vessel Inspection Database inspections. ■

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## KOPTER
Designed out of frustration

## Helicopter Myths

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*Safomar Aviation announces order of two Kopter SH09 Helicopters at HAI 2018 - Las Vegas. Safomar Group CEO Shai Shalem, Arnold Du Plessis and Fiona Hall travelled to Las Vegas to meet with the Kopter team and to officially sign the order for the helicopters. In addition to the order of the machines, Safomar Aviation is now the appointed Kopter representative in Southern Africa and on the African Continent.*

# KOPTER

## Designed out of frustration

A mechanical engineer and commercial helicopter pilot, Martin Stucki, was frustrated with what he saw as legacy designs and unsuitable cockpits in the light single-engine helicopter market which had not seen any all-new designs in decades. His market research showed a viable demand for a new rotorcraft in the 2.5-tonne class and in 2007 he formed Marenco Swisshelicopter.

Within two years sufficient finance had been raised for the SH09 to be formally launched in 2009. Initially a team of nine high quality engineers were involved with the project. A pre-production prototype was displayed at Heli-Expo 2011 in Orlando, Florida, marking its public introduction.

The flight test programme used three prototypes with P1 taking to the air for the first time on 2 October 2014 after a delay of almost six months due to the late delivery of its engine by Honeywell. It was used to complete the first phase of the flight test programme, proving the handling and attitude of the aircraft, and expanding the flight envelope, including autorotation tests and being flown to 97 per cent of its maximum internal load take-off weight. P2 and P3 were used for air-worthiness certification testing being more representative of production aircraft, their design incorporating several refinements.

Initially it was intended that deliveries would begin in 2015 with up to 15 helicopters being produced within the first year increasing to 30 rotorcraft the following year. However flight tests were halted after 100 flight hours to focus on producing the second prototype, which incorporated a modified bearingless rotor head and new rotor blades to reduce vibrations. The estimated development timeline was recognised as optimistic and certification expectation was pushed back towards the end of 2016 or early 2017. The second prototype took its first flight in February, 2016 and after an announcement that pace of the flight testing programme was being increased, the third prototype was due for completion in early 2017 with certification now during 2018. The reason given for the delay was that the company had to design and manufacture not only the helicopter itself, but also supporting tools such as test equipment.

In January 2018 Mareco Swisshelicopter was re-branded as Kopter and the helicopter is now known simply as the SH09. The company now hopes that the rotorcraft would enter service in 2019. During the 2018 Heli-Expo, Kopter announced 23 firm orders and 11 options worth $119 million from Norwegian Helitrans (12+6), Elling Halvorson for Rainier Heli Lift, Hawaiian Paradise Helicopters and South African Safomar Aviation.

### New look design

The modularity of the cabin makes the most of the flat floor and the unique high ceiling concept, offering multiple seating arrangements with 5 to 8 individual crash-worthy seats and facilitated rear access loading through the clamshell doors for cargo and medical stretchers. Using the latest technology in high tech materials and composites, and benefiting from the extensive experience of the light to medium turbine helicopter market and the most up-to-date technology contributed to the development of an all new, state-of-the-art helicopter design.

The SH09 offers the highest standards of safety, comfort and performance coupled with low operating costs and can be equipped to operate in the most adverse environments, giving it great

## Technical data

| | |
|---|---|
| Max Take-off Weight with Internal Load | 2650 kg 5,842 lbs |
| Capacity | 1 Pilot + up to 7 Pax |
| Sling-load capacity | 1 500 kg 3 300 lbs |
| Max operational weight with External Load | 2 800 kg 6 170 lbs |
| Power Plant | HONEYWELL HTS900 |
| Max Take-off Power (thermodynamic power equivalence) | 1,020 hp 760 kW |
| Fast cruise speed (at MTOW) | 260 km/h 140 kts |
| Max Range (with standard fuel tanks) | 800 km 430 nm |
| Max Endurance (with standard fuel tanks) | 3.7 hrs to 5 hrs |

appeal to operators who wish to avail of hot and high altitude performance, introducing a remarkably versatile machine with additional power, greater payload capacity, an augmented sling load capability and faster cruise speed. With a fast cruise speed of 260 km/h it is not only one of the fastest helicopters in its category, but it also offers a long range - in excess of 800km with standard fuel tanks.

The SH09 helicopter adopted several modern features in its design such as an airframe entirely composed of carbon composite materials that allows for a relatively low empty weight. It also employs a shrouded fenestron tail rotor and the main rotor features a five-bladed bearingless hub; the shrouded tail rotor has a wider diameter and a thinner chord in order to increase airflow, while design aspects such as a narrow tail boom, swept-back tips on the main rotor blades, and the shrouded tail rotor offer reduced noise.

Slotting neatly into the light-medium helicopter market, the SH09 is powered by a single Honeywell HTS900 turboshaft engine which is rated at 1 020-shaft-horsepower, providing improved performance in hot and high conditions. The monocoque fuselage is made from composite materials and is equipped with sliding side doors on either side along with a rear clamshell door; it incorporates a series of floor-mounted windows between the pilots' seats for additional vertical visibility. Some of the composite materials used have been produced using out of autoclave composite manufacturing from suppliers such as TenCate and Gurit. According to Marenco, inspiration for the fuselage's design was drawn from the automotive industry. It has been stated that the firm has sought to introduce the cabin volume of medium-sized twin-engine helicopters to the single-engine market.

The SH09 can offered a variety of different layout configurations. The standard option provides two pilot seats forward and four passenger seats aft, all adjustable fore/aft and up/down. An additional five seats can be stalled in the rear position along with two more passenger seats in line with the pilot's own, which loses the option of the floor window. The use of Kevlar-threaded crash-worthy fuel tanks, built into the wall and floor of the cargo hold, freed up space to allow for fully adjustable passenger seats in the cabin. The cargo hold is sized to accommodate 10 items of baggage, while the fuel tanks are sized to provide for an endurance of nearly five hours.

## Maintenance

The rotorcraft has been designed with a condition-based maintenance policy, specifying that there should be no time between overhaul limits on its various components and systems, including the engine; instead, maintenance is performed based upon condition, which is continuously monitored at all times by an on-board health and usage monitoring system.

## Cockpit

A Sagem-built ICDS-8A glass cockpit suite is standard for the machine's avionics and instrumentation package. The SH09 also features the G3000H, an IFR-capable integrated flight deck specifically designed for Part 27 turbine helicopters. It offers WAAS/SBAS, ILS approach capability, VFR and IFR helicopter charts and Connext wireless integration, ADS-B In/Out, visual approach guidance and an HSI map.

The G3000H combines wide-screen, high-resolution displays with touch-screen controls that serve as the pilot interface to the integrated flight deck. The landscape-oriented displays offer immediate access to critical in-flight information in a consolidated, easy-to-read format. The G3000H also features pilot-selectable split-screen capability that allows for two or more separate pages to be displayed simultaneously, so pilots can easily access valuable decision-making information on a single screen.•

# Kopter Group expands to the US

## 15.08.2018 15:53 – Startupticker.ch

Kopter Group has formed a fully owned subsidiary: Kopter North America LLC. The next step for the company is to establish an industrial presence in the US. Kopter develops, produces and supports a new generation of helicopter.

The establishment of this subsidiary is a key first step for Kopter in developing its presence in the US, which represents a significant market for the company. Kopter North America LLC will be headed by Christian Gras, as CEO – Christian is equally the Executive Vice President Customers at Kopter Group AG - and Larry Roberts, as President Sales, Marketing and Customer Support.

Andreas Löwenstein, CEO of Kopter Group, said at this occasion: "the US is cleary a prime market for our single engine helicopter, which offers the highest standards of safety, performance and comfort, coupled with low operating costs. We already have firm commitments from key American customers to acquire our SH09, as they see it as a perfect tool for a variety of missions, including EMS, Law Enforcement, Passenger Transport and Utility. It is essential for us to serve them as close as possible to where they will operate it".

The next step for Kopter is to establish an industrial presence in the US. Discussions are currently taking place with potential industrial partners and local authorities in different suitable locations. Strategic alliances will allow Kopter to accelerate the set-up and development of the company on this continent. In the mid-term, the company expects to produce and assemble aircrafts directly in the US.

Positioned in the 2.5 metric ton class, Kopter’s light single-engine SH09 helicopter is designed to stand out from the competition. It is planed that Kopter will receive the Type Certificate for SH09 in early 2019.

# Kopter announces North American subsidiary

**11 jul, 18 - HeliHub**

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# Kopter gründet Tochterfirma in den USA

## Kopter Group-Kopter North America – 11/07/18 – AEROBUZZ

Der Schweizer Hubschrauberhersteller Kopter sieht in Nordamerika einen bedeutenden Markt für seinen Helikopter SH09. Deswegen hat das Unternehmen nun eine Tochterfirma in den USA gegründet.

Der Schweizer Hubschrauberhersteller Kopter hat eine Tochterfirma in den USA gegründet und will dort auch eine "industrielle Präsenz" aufbauen. © Kopter

Die Kopter Group AG hat ein Tochterunternehmen in den Vereinigten Staaten, die Kopter North America LLC, gegründet. Andreas von Löwenstein, der Hauptgeschäftsführer (CEO) der Kopter Group begründete den Schritt mit den Worten: *„Die USA sind eindeutig einer der Hauptmärkte für unseren einmotorigen Helikopter, der den höchsten Standards in puncto Sicherheit, Leistung und Komfort entspricht, gekoppelt mit niedrigen Betriebskosten. Wir haben bereits Festbestellungen von Schlüsselkunden aus den USA, die unsere SH09 kaufen wollen, weil sie sie als ein perfektes Werkzeug für eine Vielzahl von Missionen ansehen wie EMS, Polizei, Passagiertransport und Arbeitsflüge. Es ist für uns wichtig, sie dort zu bedienen, wo sie den Helikopter einsetzen.“*

### Endmontage vor Ort ist geplant

Als nächsten Schritt plant der Schweizer Hubschrauberhersteller die Einrichtung einer „industriellen Präsenz“ in den Vereinigten Staaten. Kopter ist derzeit mit potenziellen industriellen Partnern und lokalen Behörden in Gesprächen, um einen geeigneten Standort zu finden. Kopter will in den USA strategische Allianzen bilden, um den Aufbau von Kopter in Nordamerika zu beschleunigen. Mittelfristig will das Unternehmen vor Ort Hubschrauber bauen und endmontieren.

Zum Hauptgeschäftsführer der US-Tochter ernannte das Unternehmen Christian Gras, der auch weiterhin Als Executive Vice President Customers bei der Kopter Group arbeiten wird. Larry Roberts, ein ehemaliger Bell- und American Eurocopter-Manager, stieß bereits im Februar dieses Jahres zu Kopter. Er wird als President Sales, Marketing und Customer Support die Verkäufe in Nordamerika leiten und den Aufbau des Kundendienstnetzes dort vorantreiben.

**Volker K. Thomalla**

# Kopter to debut SH09 with new capabilities

**10th July 2018 - 08:30 GMT** | The Shephard News Team

Kopter has introduced the **SH09** multi-mission helicopter in a public safety configuration.

In this configuration, engineered for Kopter by Metro Aviation, the aircraft is equipped with surveillance and illumination capability in the TRAKKA Systems A800 multispectral, high speed searchlight; the TC-300 four-axis gyro-stabilised multispectral imaging system and the TM-100 latest generation 3D augmented reality mapping and recording system.

When combined with a loiter capability of over four hours and supported by a fully enclosed tail-rotor, these systems will offer a platform capable of extended surveillance and reliable air to ground operations support over extended crime scenes.

The SH09 is a single-engine turbine helicopter featuring a large cabin with wide range of visibility, power, endurance and speed.

# Public Safety Variant Of Kopter's SH09 To Be On Display At APSCON - 09/07/2018

## Will Be Fitted With Special Equipment For The Show In Louisville, KY

The Airborne Public Safety Conference (APSCON) from 9 to 11 July in Louisville, KY marks the site for the debut of Kopter's SH09 multi-mission helicopter in an advanced public safety configuration engineered for Kopter by Metro Aviation in Shreveport, LA.

Kopter's SH09 law enforcement display will also be fitted and equipped with cutting edge surveillance and illumination capability in the TRAKKA Systems A800 a multispectral, state of the art, high speed searchlight; the TC-300 a 4 axis gyro-stabilized multispectral imaging system and the TM-100 latest generation of 3D augmented reality mapping and recording system. When combined with a loiter capability of over 4 hours and aided by a fully enclosed tail-rotor, these systems will offer a powerful, stealthy and mission capable platform ideal for extended surveillances, radical pursuits and reliable air to ground operations support over extended crime scenes.

Further confirming the SH09's robust capability, Kopter will also display the new Garmin-3000H, IFRcapable avionics and electronics deck, featuring access to VFR/IFR helicopter charts including WAAS/SBAS, ILS approach capability, synthetic vision technology as well as Connext wireless integration. The advantages of the Garmin system result in new latitudes of safety through the tremendous upgrade to pilot situational awareness.

The sum of all these capabilities combined with the SH09's large cabin volume, wide range of visibility, power, endurance, speed and reliability results in the most comprehensive airborne package ever made available to airborne law enforcement in North America. The SH09 makes all this possible in a single-engine helicopter with the cabin volume, equipment and options otherwise mostly found on twin-engine aircrafts and does it for the acquisition and operational costs of a single-engine turbine helicopter.

"I started my career as an officer flying police helicopters and I've had the honor to serve and work closely with many airborne law enforcement programs throughout the country," said Larry Roberts, president of Kopter North America LLC in charge of sales, marketing and customer support. "To me the SH09 represents the perfect combination of all the needs and desires of a multi-mission helicopter, allowing our airborne first responders to best serve their respective communities. I look forward to working with those agencies for the operational launch of the SH09 in their respective jurisdictions."

Known primarily for their expertise in air-medical completions, Metro Aviation has expanded their proficiency in the design, production and completion of police helicopters. Metro Aviation now offers some of the most comprehensive and advanced mission packages available to the industry.

AINonline

# Kopter Plans SH09 Assembly in the U.S.

by Mark Huber

JULY 9, 2018, 10:09 AM

*Kopter has set up a U.S. subsidiary, where it plans to manufacture its SH09 light single helicopter in the "mid-term." (Photo: Kopter)*

Switzerland-based Kopter Group announced plans to assemble its new SH09 helicopter in the U.S. “in the mid-term” and has formed wholly owned U.S.-based subsidiary Kopter North America. The company said establishing the subsidiary is a “first step” in developing a U.S. presence. It will be headed by CEO Christian Gras and long-time U.S. helicopter executive Larry Roberts as president of sales, marketing, and customer support.

“The U.S. is clearly a prime market for our single-engine helicopter," said Kopter Group CEO Andreas Löwenstein. “We already have firm commitments from key American customers to acquire our SH09, as they see it as a perfect tool for a variety of missions, including EMS, law enforcement, passenger transport, and utility. It is essential for us to serve them as close as possible to where they will operate it.”

Kopter said it is currently in discussions with industrial partners and local authorities at unspecified different suitable locations and that “strategic alliances” would enable it to accelerate setup and development of the company in the U.S.

ALL PHOTOS BY KOPTER

# Where Is the SH09? Kopter Gears Up to Deliver

By Dan Reed

A Swiss company founded in 2007 with the goal of launching a brand-new helicopter design has yet to deliver a finished aircraft. Expected certification dates have come and gone. Ten years is a long time to wait, especially for a company that has taken in at least $430 million from unusually patient investors without delivering a single finished product.

But leaders at Kopter — which until February was known as Marenco Swisshelicopter — are confident not only that they will deliver their first SH09 single-engine helicopter sometime in the first half of 2019 but that, within a decade, Kopter will rank among the top three civil helicopter manufacturers in the world.

It's an ambitious outlook, to say the least.

But that's pretty much the marching orders given to Andreas Löwenstein when he was hired as CEO on January 1, 2017. The 25-year aviation and defense industry veteran came to Marenco after the company's board, dominated by Russian investor Alexander Mamut via a family trust headquartered in Cyprus, pushed founder Martin Stucki into retirement

Stucki, a Swiss helicopter pilot and engineer, is rightly credited with identifying a potentially huge, underserved segment of the global helicopter market: operators looking for an all-new, technologically advanced single-engine helicopter that offers the size and capabilities of a twin-engine aircraft. But Stucki and his small team of engineers repeatedly were frustrated by unexpected technical delays and an inability to advance their promising new product through the European Aviation Safety Agency's (EASA) certification process.

So Löwenstein and a new team of industry veterans were hired away from companies like Airbus, Leonardo, Rolls-Royce, and even Bell to get the ball across the goal line as quickly as possible. Collectively, the new management team has 220 years in the helicopter industry.

"The company had been driven by people who did not come out of the helicopter industry," Löwenstein

says. "It was led by a group of brilliant engineers. But we needed to bring [the initial product, the SH09,] to certification. That means you need a team that is skilled and experienced in the certification of aircraft and, most importantly, that is trusted by the certification authorities."

The process to certify a new aircraft design is always measured in years, but Löwenstein says one reason for the SH09's slow progress was the size of the Marenco team. "The certification scope you have to cover is so broad. The documentation you have to produce is so thick. You cannot do it with 140 people, which is about what we had when I arrived. We also had to shape the product support operation, build the sales team, and create an assembly-line process, all in order to win certification. So we needed to bring in people with lots of experience in each of these areas."

By late 2016, it was clear to all involved that Marenco Swisshelicopter had a solid foundation — the design of the SH09 was both innovative and on target. But it also was obvious that the company was struggling to put all those other important elements together in order to earn certification. That's why the change in leadership had to be made.

With founder Martin Stucki no longer involved — whose **Mar**tin **En**gineering **Co**nsultants gave rise to the Marenco brand — that made-up word no longer seemed relevant. And *Swisshelicopter* is such a long word — and one that proved to be very hard to pronounce by many nonnative German, French, and English speakers — that the new leadership determined that it, too, had to go.

The company needed a shorter, pithier name that would stick in helicopter buyers' minds and roll off international tongues with ease. And, indeed, *Kopter,* with a K to capture the company's Swiss/Germanic heritage, has seemed like an inspired choice since the new brand was introduced on February 1 of this year.

## Building toward Certification

In the roughly 18 months that Löwenstein has been on the job, the company payroll has more than doubled in size, to around 300. Another 50 or so employees are expected to be added by year's end.

Since Löwenstein's arrival, the company's headquarters and engineering teams have been relocated to a new, larger facility in Wetzikon, east of Zurich. The company has staffed up its dynamic testing facility in Ennetmoos, south of Zurich.

Staff have been added at Kopter's certification management office across the border in Siegertsbrunn, Germany. And new staff are being added and trained at the company's primary manufacturing and assembly plant in Mollis, south of Zurich. Because that facility's maximum production capacity will be a little more than 50 units per year, Kopter also plans to start final assembly lines in the United States and Asia as production ramps up.

Meanwhile the SH09 now has completed more than half of its flight-test program. Flight testing began in earnest in 2014 but had to be put on hold for more than a year when a problem with excessive vibration was discovered. A redesigned bearingless rotor and new, slightly stiffer rotor blades solved that problem, and flight testing resumed in 2016.

Kopter earned its Design Organization Approval from EASA back in February. That's a necessary precursor to the SH09 earning its final type certificate, which the company expects to happen in 2019.

## A Concept for Today's Market

There was never a doubt that Stucki's initial vision of a full cabin-class helicopter powered by a single turbine engine would have strong appeal in the market. The SH09 offers significantly more cabin space and flexibility than its single-engine Bell 407 and Airbus H125 competition — as well as more cabin space than the twin-engine Airbus H135 and comparable cabin space to the larger, pricier H145.

"We're able to offer a helicopter with a cabin that's as big as or bigger than the H145 at a price close to the H125 and the 407," says Larry Roberts, a longtime U.S. helicopter sales executive with both Airbus and Bell whom Löwenstein hired in late 2017 to lead Kopter's sales efforts in North America. "Twin-engine cabin and performance for single-engine acquisition and operating costs is a very, very attractive offering, we think."

The combination of the SH09's lightweight, all-composite monocoque body — which borrows heavily from the world of Formula 1 racing — and a powerful HTS900 engine from

Kopter staff, including CEO Andreas Löwenstein (right), celebrate at HAI HELI-EXPO 2018 with some new customers, including Calvin Dorn of Paradise Helicopters (second from left) and Elling and Lon Halvorson of Rainier Heli International (third and second from right).

The SH09 features a lightweight, all-composite body coupled with a powerful Honeywell HTS900 engine, giving it excellent hot-and-high performance.

Honeywell capable of delivering 1,020-shaft-horsepower should give the SH09 excellent hot-and-high performance characteristics. That seems befitting for a helicopter whose originator, Stucki, actually flew medical rescue missions in the Swiss Alps.

And when it's not tasked with flying in especially high altitudes, that combination of lightweight construction and a powerful engine will give the SH09 a significant advantage over the competition in terms of internal or external carrying capacity and range.

Assuming the production version meets its design goal of an empty weight of 1,300 kg (2,866 lb) — each of the four test vehicles has been overweight, but sequentially less so — the SH09 will be capable of carrying passengers, equipment, and cargo with a combined weight that slightly exceeds the aircraft itself. It'll also be a fast helicopter, capable of cruising at speeds of up to 140 knots with a full load.

Those operating characteristics and its low purchase and operating costs versus its twin-engine competitors make the SH09 ideal for the North American helicopter air ambulance (HAA) market, Löwenstein says. European rules require HAA helicopters to have two engines. But no such requirement exists in the United States, where helicopter air ambulances typically are asked to carry heavier loads and fly greater distances to and from hospitals than their European counterparts.


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## More than a Big Engine

Technology plays a big part in the SH09's competitive advantage. "It's not only because of the engine," Löwenstein explains. "When you compare the layouts of the competing aircraft you are comparing a 1974 Chevrolet with a 2018 Chevrolet. With the 2018 model you are using much lighter, but just-as-strong or stronger composite materials rather than steel and aluminum. That means you can use that weight savings to have a much larger passenger compartment.

"And greater cabin size means a much more capable mission envelope," says Roberts. It can carry up to seven passengers in transport or sightseeing configuration. It can be a spacious executive transport. And in the EMS role you can add a second patient, if your litter configuration will allow it. Or you can put more medical equipment and/or a second medical person onboard."

In addition to the SH09's mission-stretching power and range, its economics hold the potential of changing the HAA helicopter business. With operating costs roughly 35 percent lower than twin-engine helicopters commonly used by HAA operators — not to mention its lower purchase price (2019 list price of $3.34 million), the SH09 quite literally could turn struggling HAA operations into profit-makers.

"Currently most U.S. [HAA] companies need to handle 35 to 40 flights per month just to cover their expenses on the helicopter," Roberts says. "But our helicopter's lower acquisition and operating costs will mean that their breakeven number on missions flown each month will be much lower."

The SH09 will come standard with a glass cockpit that features enhanced graphics, integrated navigation equipment that give it full IFR (instrument flight rules) capability, and a two-channel FADEC and four-axis autopilot that will expand mission capability, says Roberts. "With all the capacity, power, range, and technology that our helicopter will bring to the market, EMS operators will be able to accept more missions that they probably would have had to turn down previously."

## The Waiting Is the Hardest Part

Roberts admits to some impatience because he "can't put anybody in one of our machines yet. But I do think that we've already got 31 to 35 [North American customers] who I'm pretty sure will want this helicopter."

Yet those North American customers may have to wait until 2021 or so to actually take delivery of a SH09.

Nearly a year away from its expected first delivery, Kopter already has 63 firm orders on its books, plus around 100 letters of intent (LOI) from customers who've ponied up little or no cash, but who are keenly interested in getting their hands on the aircraft. Based on his experience and analysis of the global and regional economies, Löwenstein expects about 70 of those LOIs to turn into firm orders.

"We're getting very close to selling out our first three years of production capacity," he says. But, he adds, Kopter is keeping production goals for its first couple of years "reasonable and cautious" as its Swiss production team gains experience.

Löwenstein says Kopter's "Swissness" will be a key feature of the aircraft. Kopter is banking that the international aviation industry will find attractive the Swiss reputation for manufacturing precision, exacting engineering, operational reliability, and acute attention to detail. These qualities will undergird Kopter's operations, beginning with its expectations for its suppliers and going all the way through production and final assembly. Indeed, even after Kopter opens final assembly lines in other parts of the world, Löwenstein expects the company to build most of its helicopters' major dynamic subsystems and components in Switzerland before shipping them out to those assembly lines.

But because of the Swiss facility's limited capacity and its distance from what the company expects to be its biggest markets, by year four of full production, Löwenstein expects Kopter to be turning out more than 100 aircraft a year from at least two final assembly lines, one in Switzerland and, most likely, one in the United States. In fact, one of Roberts's responsibilities is scouting out U.S. locations where there already is the kind of helicopter culture that Kopter wants. The Dallas–Fort Worth area, home to both Bell and Airbus North America engineering, sales, and headquarters staffs, is a leading candidate, though Roberts also is scouting potential locations in Florida and New England.

"We will start delivering to our community of launch customers here in Switzerland and in Europe, which are highly stable helicopter operations

A fast aircraft with a spacious cabin and low operating costs, Kopter executives see the SH09 as a natural fit for the helicopter air ambulance market.

with stable operating environments, out of our facility here in Switzerland. These operators will help us introduce our helicopter into the market in a stable and effective manner," says Löwenstein. "But I do expect to be among the top three producers of helicopters in the SH09's class within 10 years, so we will be ramping up rapidly after that."

Demand in that market segment, Löwenstein says, "is strongly correlated to world economy. And we expect the economy to be strong."

## Looking Ahead (Just a Little)

Kopter foresees very strong demand for the SH09 among operators now flying competing aircraft designed 25 or more years ago. Those models, Löwenstein says, are reaching the end of their design life cycles. As a result, modern designs, like the SH09, will bring highly sought and much-needed new technologies, new materials, and lower operating costs to the market.

The Kopter SH09, he says, will benefit from being both the first clean-sheet design in its class in a quarter century and the first all-composite helicopter in that same class.

"The single-engine market is aging badly," he says. "There will be significant replacement need. And I'm quite convinced now that we have growth driving the market, particularly in the single-engine market, around the world."

The SH09's expected success, Löwenstein hinted, likely will lead to a second new aircraft from Kopter sometime in the next decade. He won't talk about specific plans but coyly talks about how "when you bring in a team of young and talented engineers, you will not leave them idle."

For now, though, those engineers and Löwenstein's management team are focused on reacting quickly to any new problems uncovered by the flight-test program. "Our engineering team is now mature enough to face the unforeseen event. That wasn't always the case. And it makes me feel now that we can achieve in 2019 what we've promised" — delivery of a certified aircraft.

"Our rotor system has been turning for more than 500 hours now," he added. "We have been doing lots of validation of major parts of the flight envelope. And we have had no indication that we will have to face any more major issues. But if we do, I believe we are prepared to handle it very well."

*Dan Reed is an award-winning journalist who has covered the airline industry, aircraft manufacturing, aviation, aviation safety, and related fields for 29 years, first for the* Fort Worth Star-Telegram *and then for* USA Today, *where he also served as Texas bureau chief. Now a freelance writer and communications consultant, Dan and his wife are the parents of three adult sons. They live in Fort Worth with Bella, a relentlessly energetic 93-pound Labrador Retriever.*

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# I, ROBOT HELICOPTER

**Technology that was once only to be found in science fiction novels is fast becoming reality, as advances in avionics, composite materials and connectivity bring enhanced services and safety to the air ambulance sector**

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V280 Valor

It took 450 years for the fantasy helicopter imagined, described and drawn by Leonardo da Vinci to evolve into the planet's first practical rotor-powered flying machine. Igor Sikorsky's VS-300 took its first untethered flight at Stratford, Connecticut in 1940, and since this time, helicopters have become vital – and ever lighter, nimbler and faster – assets not only for armed forces but also for emergency medical and rescue services.
Now, though, the industry is moving faster than ever, with better engines powering lighter aircraft, while developments in avionics mean pilots can fly more safely and patients can receive better care from medics using enhanced kit.

**Structural and environmental progress**

The Kopter Group in Switzerland was founded in 2007 with the aim of building a new generation of turbine helicopters. Its Executive Vice-President (Technology) Michele Riccobono took *AirMed&Rescue* through the development of airframe design and manufacture since Sikorsky got his VS-300 up in the air – progress that has resulted in the shape and performance of the medevac helicopters we see today.
"The past 30 years have seen an evolution mainly in the areas of materials which, in turn, drove design and manufacture. All helicopter airframes produced and certified in the 1970s and 1980s were manufactured using aluminum structural elements riveted together. With the availability of composite materials in more recent years, a series of structural elements started to be produced using these new materials, initially with glass fibres then honeycomb, and finally full carbon fibres."
As is often the case with advancements in the aviation industry, what slows down the introduction of new equipment is the lengthy certification process, explained Riccobono: "The introduction of these materials has been progressive due to the certification burden; the need to establish new certification requirements and guidelines for material qualification. Initially, secondary structures, such as doors and cowlings, started to be produced with composite materials, taking advantage of the easier modelling and

## THE MAIN FLIGHT IMPROVEMENTS ARE THE INCREASED LOAD CAPACITY, SO WE CAN CARRY EXTRA FUEL, EQUIPMENT AND PEOPLE

reduced complexity in serial manufacturing once the proper tooling had been developed."
Step by step, though, the development of the material continued: "A series of hybrid structures mixing composite and metal started to appear, to switch later to a full composite structure in which different elements are either bonded or riveted together … basically using the same assembly concept of metallic structures, but producing the individual elements out of composite. This is now being pushed further forward to develop a full composite airframe in a monococque configuration: the entire fuselage is made of a single part. But this has so far been done only with small helicopters – two seaters – due to the complexity in certification and production."
The use of carbon fibre, added Riccobono, is also beneficial for safety.





"It allows us to create a structure that has a level of crashworthiness equivalent to that of a conventional metallic structure but with a much lighter weight. Carbon fibres also make it easier to model complex aerodynamic surfaces that enhance the helicopter's performance, and we have adaptive manufacturing using 3D printers for producing even complex moulds. Carbon fibre or composite structures also offer better damage tolerances and a very long service life, especially for primary structural elements such as helicopter rotor blades."
Talking of progress, Honeywell in the US points to the 'continuous improvement' in helicopter engines over the years. "Since Honeywell

## OUR TEAM HAS COMPLETE ACCESS TO THE PATIENT, HEAD-TO-TOE

entered the aircraft propulsion market in 1953," said Karina Larsen, Vice-President (Partnerships & Business Development), at Honeywell Aerospace, "we have overseen improvement programmes that have resulted in engines that provide more power, increased mission range, enhanced payload capabilities and a wider operating spectrum. There is," she added, "an ever-growing need for engines that require less maintenance, have more intuitive design, and benefit from lower fuel consumption. Modern engines are certainly expected to be more fuel efficient."
Riccobono at the Kopter Group reports that turboshaft engines are now being developed with requirements that were not, until now, rated as being of primary importance in a world that was largely unworried by climate change and aircraft noise. Times, though, are changing: "Low specific fuel consumption, reduced $CO_2$ emissions and lower noise levels are requirements of the airplane engines that are now being imported into the helicopter market. Additionally, the reliability of engines is being increased significantly not only by their design but also by the availability of control systems – such as Full Authority Digital Engine Control – that constantly monitor the engine's health. This enables the early detection of degradation that, if not discovered, could lead to engine failure in flight." This enhanced reliability is bringing more choice to the industry, he added: "The use of single-engine rotorcraft is now being considered more and more for missions such as helicopter emergency medical services for which in the past only twin-engine helicopters were used. This is particularly beneficial because it reduces operating costs and, because it's more affordable, it ultimately increases service availability." Kopter's own helicopter, the SH09, is being developed as a game changer, since it 'offers the cabin space, performance and safety standards of a twin-engine helicopter for the price of a single'.

**Operator POV**

One of the best ways to determine the optimal features of a 21st Century air ambulance helicopter is to talk not only to the manufacturers, but also to the people who actually operate and fly them across all terrains and in all weathers. The Dorset & Somerset Air Ambulance Service in southern England ran 1,197 missions – that's 23 each week – in the year ended March 2018 in a twin-county coastal region popular with hill walkers, sailors, swimmers, anglers and surfers, and bordered by busy shipping lanes. Last year, it decommissioned its Airbus Eurocopter EC135, which carried two crew and two patients, and replaced it with an £8-million AW169, a twin-engine, 10-seat helicopter developed and manufactured by Italy's Leonardo Helicopters, AW's re-branded identity.
The new machine was necessary, says the service's CEO Bill Sivewright, because changes in the region's hospital network meant that patients with major trauma conditions would have to be flown to centres farther away than was previously the case. "Without a major trauma centre in Dorset or Somerset, we therefore needed the ability to be able to fully treat a patient en-route to hospital. Further examination of the requirement also revealed something quite simple: if the patient was at the centre of our thinking – and on-scene the patient is at the centre of the 'treatment zone' – should the patient not be at the centre of the cabin of the air ambulance? Once this logic was applied, the choice of a successor aircraft was quite straightforward. That is not to say that factors such as cost, safety, and potential for night operations were not considered, but only one platform offered us the cabin format to meet our fundamental requirement."
The unit's chief pilot Mario Carretta highlights the improved medical and flight capabilities of the AW169 compared with the machine it replaced. "The main flight improvements are the increased load capacity, so we can carry extra fuel, equipment and people. The main difference clinically is that

## CONNECTIVITY IS BECOMING A NECESSITY ON BOARD; SAFETY, MAINTENANCE, AND REAL TIME DATA CAN ALL BE ENHANCED WITH CONNECTED SERVICES, AND IT CAN ALSO HELP WITH FUEL ECONOMY

our team has complete access to the patient, head-to-toe. That means that they are in a much better position to help a patient if there is a problem en-route to hospital.
He continued: "Having the greater endurance allows the helicopter to cover a much wider area than before and means the aircraft can complete more tasks without the need for a re-fuel. Having fully integrated traffic collision avoidance, helicopter terrain awareness and synthetic vision systems >>

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A NSW Police Bell 412

increases the pilot's situational awareness and helps to reduce the workload, particularly at night and in poor weather. The aircraft's single-engine performance is also impressive."

The service, which takes patients to 14 hospitals across the south-west of England, says that the AW169's night flying capabilities mean that it can undertake full night medical missions. Pilots can fly directly to the patient without the need for any fixed or pre-established lighting, described as a 'significant' advantage.

The AW169 was not in fact bought by the service which, like many air ambulance units in Britain, is funded largely by charitable donations instead of the state. "It is leased," Sivewright told *AirMed&Rescue*. "This was the most cost-effective way to procure such an expensive asset. If we owned the aircraft and for whatever reason it needed a major component replaced, the charity would have to meet the full cost of repair. That is a risk that we felt was not justified."

Three other air ambulances services in England are using the AW169, and it's been ordered by medical and rescue operators in Sweden, Switzerland and New Zealand.

**What's on the inside**

As ambulance helicopter airframes evolve into what are almost flying treatment rooms, attention is turning to making the most of the increased space available with interior fittings that are light, functional and easily adaptable.

In Austria, Helikopter Air Transport (HAT) has designed Kokon, a carbon fibre modular medical interior lining that has been installed in the twin-engine Airbus H135 helicopters used by the company's air ambulances. Kokon, says HAT, is a 'superior, stylish and minimalist alternative to standard interior panels'. Manufactured in Innsbruck, its features include:

- A total payload capacity of 76.5kgs/166.4lbs directly on the interior lining
- Flexible and fixed mounting positions for varying loads and dedicated containers for medical equipment, which increases cabin space
- Easy and fast change of equipment configuration
- Smooth cladding that makes helicopter interiors seem larger than they actually are
- Availability in different colour schemes
- Quickly removable to enable access to airframes
- Customisable, with or without sound proofing
- Cleanable with standard disinfectants and detergents.

Wolfgang Burger, the company's Technical Director, told *AirMed&Rescue*: "It's a multi-purpose, carbon fibre interior liner is designed to get more medical and other equipment into smaller spaces – to maximise available space – so that the cabin area for crews is wider, and the smooth cladding makes the interior space look even larger. The design can be adapted for use in different helicopter airframes."

At Cobham's Aerospace Communications division in South Africa, Regional Sales Director Andrew Legg flags up an avionics problem – or challenge – for helicopters. "Cobham has always prided itself on reducing the weight and cost of satcom products. While our equipment is one of only a few accepted standards in the industry for fixed-wing airframes, rotary wing

## NAVIGATION SYSTEMS ARE SPECIFICALLY BUILT TO WITHSTAND THE OFTEN HOT AND DUSTY CONDITIONS THAT ROTORCRAFT OPERATE WITHIN

platforms remain a challenge for satellite communications. This is due to interference caused by the chopping of the signal by the helicopters blades, which rotate between the antenna and satellite." The effect of this ranges greatly based on the nature of the blade composition, blade dimensions, the satcom system's antenna location and area of operation of the rotary wing platform, explained Legg. This means that helicopter applications can work

BELL

Q400 Interior

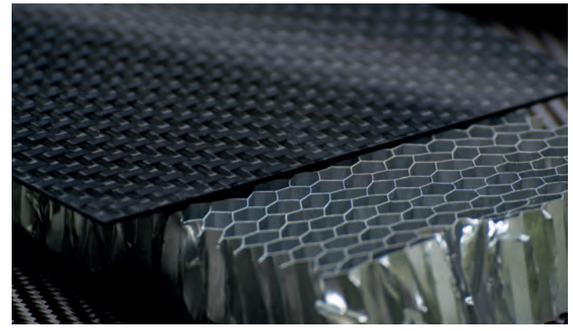




either very well, moderately or with difficulty.

Integration and proof-of-concept operation testing, he said, 'are therefore mandatory in any installation planning prior to fleet roll-out of a satcom solution. There are solutions to this problem and we continue to explore these with our partners in the industry'. "One such solution is the HDR Bearer offered by Inmarsat on its SwiftBroadband Service. While this solution works well in principle, it has a niche market in that it really serves only high throughput customers moving video off the platform. It's not cost effective for general connectivity. We do have product working successfully on a range of platforms from the Bell 407 to the AW101."

Honeywell's Karina Larsen agrees that helicopters present communications and connectivity problems, but says they can be overcome. "They are a challenge because rotor blades can interrupt satellite signals to and from



rotorcraft. But with a digitised solution, such as our Aspire 200 Satellite Communications system, we see significantly enhanced capabilities for reliable, connected communications for helicopters.

"Connectivity is becoming a necessity onboard; safety, maintenance, and real-time data can all be enhanced with connected services, and it can also help with fuel economy. Consistent connectivity is very important for helicopter operators. It enables critical communication between the aircraft and the ground and allows passengers to stay connected while they are in the air. Connectivity effectively turns an aircraft into an information hub, providing a stream of data to and from the aircraft. Whatever its mission profile – air ambulance, government use, oil and gas transportation, VIP/executive transport and others – connectivity greatly enhances the modern rotorcraft."

Honeywell also flags up developments in navigation systems. "They are specifically built," Larsen told *AirMed&Rescue*, "to withstand the often hot and dusty conditions that rotorcraft operate within. With our ring laser gyro technology, we provide pilots with incredibly accurate positioning data and maximised safety even during extended periods of operation."

The latest avionics suites available come with scalable architectures that can be tailored to a variety of helicopter designs, said Kopter Group's Riccobono. "They collect and analyse a large volume of data in an intuitive environment, significantly reducing pilot workload. The increase in pilot situational awareness is the result of cockpit designs that prevent human-factor related errors that are still the major cause of aviation accidents.

"Kopter is the first original equipment manufacturer to partner with Garmin for their new G3000H avionics suite, the best-in-class situational awareness system enabling a higher level of safety for every mission. The large dual landscape-oriented displays and single touchscreen controller can be configured according to customer requirements. Helicopter pilots can make the most informed decisions while operating in high workload conditions."

Looking to the future, Kopter sees helicopter airframes getting even bigger, believes Riccobono. "They are likely to be larger, with a reduced number of parts, although switching to a full monocoque architecture is made difficult by the certification burden, especially for the reparability of impact damage. A reduced number of parts cuts assembly costs, but as increased investment for tooling is necessary, a careful balance has to be made in the design to develop a sustainable economic model. Some recent helicopter models have airframe sections such as the canopy produced as a single part, thus reducing manufacturing and assembly costs."

**Coming soon?**

In Italy, Leonardo and the Politecnico di Milano (PoliMi) are developing new technologies for helicopters as part of their expanding collaboration, launched in 2016 with the signing of Innovation Hub, a multi-year framework agreement. "In Leonardo, we invest in continuous and increasingly collaborative innovation," noted Alessandro Profumo, Leonardo's CEO."[We aim] to develop increasingly effective and sustainable solutions for our customers and for Italy." The multi-year collaboration with the Politecnico of Milan is a concrete example of this. "By putting our wealth of skills in line with those of the academic world," added Profumo, "we can accelerate the processes of innovation and technological development, create synergy and mutual benefit to support the competitiveness of Italy."

Through project Comfort, Leonardo and the PoliMi are developing technologies to reduce the vibration and noise of helicopters, and the reference platform for the study is the AW139 helicopter. The research activities are concentrated on three main areas: the rotor, from which the vibrations originate; the main gear box attachments, through which rotor vibrations are transmitted into the helicopter structure, thereby reducing the level of comfort, and finally on the airframe itself. The ultimate goal of the programme is to demonstrate a significant vibration and internal noise reduction, through the co-ordinated use of passive and active systems.

Elsewhere, the shape of air ambulances to come could be the pilotless Cormorant, built by Israel-based Tactical Robotics. It could be used, if and when it's operational, for battle area medical evacuations. At a demonstration in northern Israel in 2015, the one-ton Cormorant – with a

## AIRFRAMES ARE LIKELY TO BE EVEN LARGER, WITH A REDUCED NUMBER OF PARTS

mission range of approximately 30 miles – carried 1,000 lbs. of cargo and a medical training mannequin at speeds exceeding 100 mph.

Powered by a single turboshaft engine of the type used in conventional helicopters – but with two smaller, contained rotors instead of one large one on top – its physical footprint is reduced, a big advantage in urban, wooded and mountainous environments. The company – which hopes the bug-shaped Cormorant will be bought by Israel's defence force and the US military – says that it can operate in winds higher than those with which a human helicopter pilot would be comfortable. Patients – it can carry two if there's no cargo load – would be connected via a remote monitoring system to ground staff able to check their vitals and talk with them on a two-way video link. Tactical Robotics says the carbon-fibre airframe should help it to dodge radar detection, while its exhaust system can be air-cooled to reduce its infrared signature.

Science fiction, or a reality coming to a helicopter ambulance station near you?

AÉRONAUTIQUE

# KOPTER, LA PME SUISSE QUI DÉFIE AIRBUS

Le constructeur suisse Kopter compte ravir des parts de marché à Airbus Helicopters. Il a constitué une équipe d'experts reconnus et mis au point un appareil innovant.

PAR GUILLAUME LECOMPTE-BOINET

**La turbine HTS 900 de 1000 CV** fabriquée par l'américain Honeywell est relativement récente puisqu'elle a été certifiée au milieu des années 2000. L'un de ses atouts est un système de régulation numérique (Fadec) dernier cri qui permet de réduire la consommation de carburant.

**LES GRANDS JALONS DU SH09**

- **2014** Premier vol
- **Mi-2019** Certification
- **Fin 2019** Mise en service
- **2022** Objectif d'une cadence de production de 50 appareils par an

SOURCE: KOPTER

Une ancienne base de l'armée de l'air suisse nichée dans le canton de Glaris, à proximité de Mollis, une petite ville dominée par les sommets enneigés. Voilà le cadre que s'est choisi le constructeur suisse Kopter (ex-Marenco Swisshelicopter) pour installer sa nouvelle usine d'assemblage, à une heure et demie de route de Zürich. Inauguré début février, ce bâtiment ultramoderne devrait fabriquer, d'ici à 2022, 50 exemplaires par an du SH09, l'hélicoptère conçu par Kopter, une machine légère et mono-turbine. La start-up est sans complexe. Elle s'attaque à une légende des voilures tournantes, l'Écureuil d'Airbus Helicopters, déjà vendu à plus de 5 700 exemplaires depuis son apparition sur le marché, en 1978. L'ambition de Kopter? Ravir d'ici à cinq ans de 20 à 25 % du marché mondial des hélicoptères civils mono-turbine, un segment qui pourrait atteindre près de 11 000 machines neuves vendues d'ici à 2036, selon les prévisions d'Airbus Helicopters.

Rappel des faits. Le SH09 est conçu entre 2007 et 2009 par un ingénieur suisse, Martin Stucki. Le premier exemplaire est testé en octobre 2014. Un second prototype prend l'air en 2016, non sans quelques problèmes. Deux autres exemplaires d'essai doivent voler en 2018. L'une des originalités du projet est qu'il est entièrement financé par un oligarque russe, Alexander Mamut, un ancien conseiller de Boris Eltsine dans les années 1990 qui a investi pas moins de 270 millions d'euros dans l'affaire au travers de Lynwood, son fonds d'investissement implanté à Chypre. L'industrialisation du programme nécessitera au minimum 200 millions d'euros de plus.

**Le SH09 possède une cabine de 6,5 m³**, l'une des plus grandes du marché (presque deux fois le volume de celle du Bell 407 de Bell Aircraft). La grande porte arrière a été spécialement conçue pour les missions d'évacuation sanitaire.

Pour renforcer la maturité du programme, un coup de balai dans le management a été donné en 2016 et 2017. Exit Martin Stucki, place à une équipe venue de la concurrence : Philippe Harache, le président de la société, Andreas Löwenstein, le directeur général, Jan Nowacki, le patron des opérations, tous trois issus d'Airbus Helicopters, ainsi que Michele Riccobono, débauché de Leonardo Helicopters et placé à la tête du bureau d'études, pour ne citer qu'eux. « Nous devons passer d'une mentalité de start-up ingénieuse à celle d'un véritable constructeur, capable de produire en série et d'apporter un soutien aux clients dans le monde entier », explique Andreas Löwenstein.

La concurrence observe la société avec intérêt. « Sur le papier, le SH09 est une belle machine, mais on va voir si



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## LES PRINCIPAUX CONCURRENTS DU SH09

**AIRBUS HELICOPTERS** H125/130 - France, Allemagne

L'Écureuil a effectué son vol inaugural en 1974 et est entré en service en 1978. Il a fait depuis l'objet de plusieurs modernisations (rotor, turbine...). Sa dernière version date de 1997. Il s'est vendu plus de 5700 exemplaires, le record de sa catégorie. Son rayon d'action est de 600 à 650 km.

**TEXTRON** Bell 407 - États-Unis

Cette machine mono-turbine, entrée en service en 1996, est un dérivé d'un hélicoptère militaire, le Bell 206L. Il a été produit à près de 1700 exemplaires, toutes versions confondues, et affiche un rayon d'action d'environ 630 km.

**LEONARDO** AW119 - Italie

C'est le plus récent des concurrents du SH09. L'AW119 Koala a été mis en service en 2000 et fabriqué à 310 exemplaires. Il est, comme ses concurrents, aménagé pour 8 passagers (pilote inclus) et affiche une distance franchissable de 650 km.

Kopter réussit à la faire certifier dans les temps», lance-t-on chez Airbus Helicopters. Le suisse a bien l'intention de perturber le jeu. Il va s'appuyer en priorité sur la modernité du SH09 et sur la présence de technologies de pointe face à ses concurrents beaucoup plus anciens.

### La certification, sésame attendu en 2019

Son hélicoptère est par exemple le seul de sa catégorie à avoir un fuselage entièrement composé de fibres de carbone pour combiner légèreté et résistance à la corrosion. Les dirigeants vantent aussi l'important volume intérieur de sa cabine afin de répondre au marché de l'évacuation sanitaire comme à ceux du VIP et du tourisme. Le marché nord-américain, de loin le premier pour les hélicoptères, est le principal débouché visé par le Suisse. «Nous allons mettre en avant les qualités traditionnelles des produits suisses, la solidité et la précision», insiste Andreas Löwenstein. Le SH09 a déjà enregistré 34 commandes ferme, auxquelles s'ajoutent environ 130 engagements et lettres d'intention. Certains contrats ne seront validés qu'après l'obtention de la certification, qui devrait intervenir d'ici au second semestre 2019. Kopter s'est doté d'une usine qui utilisera les process du lean manufacturing, avec un assemblage en «flow line» et un objectif de temps de cycle de vingt semaines dans un premier temps. Ce chiffre est toutefois encore loin des standards d'Airbus Helicopters, qui réalise l'assemblage de l'Écureuil en quatre à cinq semaines à Marignane (Bouches-du-Rhône). Le «petit Suisse» a encore du chemin à faire... ■

TEXTRON, AIRBUS HELICOPTERS, D.R.



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# AirMed&Rescue magazine

POLICE AVIATION EDITION

ISSUE 90 | JUNE / JULY 2018

## Insights into medical interiors

Is a modular solution the answer for an aircraft performing many roles?

## Profile: South Africa Police Service

Insights into the operations of the Air Wing

AIRMED&RESCUE MAGAZINE
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# Kopter
## Company Profile

Entering the headquarters of Kopter in Wetzikon, Switzerland, what immediately strikes you is the air of quiet excitement; as well as the large helicopter placed in the middle of the open plan office – the first prototype of the SH09 has been given pride of place in the building. The team at Kopter is right now working steadily towards its goal of certification of its SH09 helicopter, which will happen during the second half of 2019, with P3 (the third prototype) to head into flight testing in the coming weeks.

For CEO Andreas Löwenstein, the ramp up towards delivery of the helicopters to the first customers is an exciting time, and one he has been working towards since he joined the company some 18 months ago. With more than 28 years of experience in the aerospace and defence industry, having worked at EADS and Eurocopter in the past, there is little doubting the fact that he knows what the market needs, and for him, the opportunity to be at the helm of a company that is delivering a brand-new helicopter to the market was one that he couldn't pass up. "I've always been a builder," he told *AirMed&Rescue*, "whether that is building a company or building a team. To bring together the team and knowledge that inspires the spirit of innovation is a very enjoyable experience."

A costly one though – CHF300 million (€253,670,343) has been spent so far, and certification has still to come. In a move new to the industry, Kopter is aiming for dual accreditation from the European Aviation Safety Agency and US Federal Aviation Administration at approximately the same time – ambitious, for sure, but achievable, said Löwenstein, depending on how the two agencies will work together, which seems to be going very well today.

**Fresh approach**

Designed originally in 2009 by Martin Stucki from scratch, with large rear-opening cargo doors and no separation between the cockpit and the cabin, the spacious interior of the SH09 allows for a wide range of configurations – emergency medical transport, surveillance and law enforcement, utility, and passenger transport. Its modular design means that the change from one mission profile to another can be effected quickly and easily – from adding another stretcher, to moving the pedals from the second pilot's seat in order to allow an additional passenger to sit safely in that seat without risking an accidental movement of the pedals by that passenger. Löwenstein used the term 'a flying Swiss Pocket knife'. Löwenstein has mentioned in the past that innovation in the helicopter market is notable by its absence – 'it's easier for manufacturers to stick with what has been tried and proven', he said.

So, what is different about the SH09 to other aircraft? "New technology has allowed for a change in fundamentals – the helicopter architecture being one," he said. "Being made from composite materials means it is both light and crash resistant. The second revolution is the additional safety features that we have put on the aircraft as part of the initial design – these (such as many dual systems) are often optional extras [on other aircraft]. Finally, the cost of maintenance and operation will be lower." There was mention too of linking the digital systems of the aircraft and some more sensors with an app on the customer's mobile device, which would allow connected services, enabling for more efficient maintenance processes.

The cabin of the SH09 will come equipped with a full glass cockpit, with an avionics suite from Garmin – the newly launched G3000H. "The G3000H will ease the workload of SH09 pilots while providing best-in-class situational awareness. This will enable a higher level of safety for every mission, the core principle behind the design of our helicopter," noted Michele Riccobono, Kopter Executive Vice-President Technology. Safety has been at the heart of the helicopter's development from its inception.

The air medical industry will without doubt be a key customer segment for Kopter – for the past 18 months, it has been working on the interior cabin design with Metro Aviation, one of the largest providers of air medical services in the US. This has resulted in more space for stretchers, better access to the patient (s) for the medics, and more space made available for medical kit thanks to the movement of a fuel tank from the cabin wall into the cabin floor.

Kopter's manufacturing and flight testing departments are in the dramatic landscape of a valley near Mollis, not far from its headquarters in Wetzikon, and although currently it only has the one hangar, plans are afoot to build a 16,000m$^2$ facility in 2019. Production of certain parts of the SH09 – such as the five rotor blades – are done in-house. Most, though, are sourced from third party suppliers. While every effort has been made to ensure the finest quality for each of the thousands of components from which a helicopter is built, there are almost inevitably some teething problems. One such issue has been with the dynamic components provided by a supplier in the third prototype (PS03), which will (once fixed!) be off to Sicily for three quarters of intense testing, where it will be put through its paces and pushed to – and past – its operational limits. The small delay in getting the P3 to Sicily for testing has actually had a beneficial side too – the company is taking advantage of the schedule shift to refine a number of subsystems where areas of further optimisation were identified during ground testing. While these refinements were meant to be phased into the PS4 (Pre-Series 4) aircraft, by putting them onto the P3, >>

the development programme can be accelerated. The PS4 will be the aircraft submitted for certification, which Kopter expects will be achieved next year, ensuring the first aircraft can be delivered to customers before the end of 2019.

While currently the plan is to build the helicopters in the facility in Switzerland, there will be a time in the near future, according to Löwenstein, when this will not be the case: "The SH09 has been built in the knowledge that parts can be made here, and tested here, but can ultimately be put together in other countries." There will be a manufacturing facility in the US before long, he said, and there are also plans to expand to the Asia Pacific region. Assembly facilities around the world are a sensible move – not only to ensure compliance with local laws and regulations, but lso because it is a much more cost effective way of doing business, he explained, as Kopter will be able to meet local operator requirements for customisation of the helicopter.

**Market opportunity**

The belief in the product among the Kopter employees to whom *AirMed&Rescue* spoke for this article was infectious. Christian Gras, Executive Vice President of Customers, has lengthy experience in the industry, and is passionate in his belief that strong, adaptable single-engine helicopters such as the SH09 are the future of the industry. "Kopter," he said, "is going to shake up the hierarchy of the helicopter manufacturing sector."

Having worked in the US, Europe and South America, Gras's understanding of market dynamics is impressive. Identifying gaps in the market and being able to exploit them is key to success in any business, but in the relatively dense aircraft manufacturing business, it is more important than ever.

The growth of the helicopter emergency medical services sector in the US will continue, he says, and through a close strategic co-operation with Metro Aviation, Kopter is planning on holding a strong position in this area in years to come: "We are going to aim to take a significant per cent of the market in the next 10 years," he told *AirMed&Rescue*. With many operators in the US still using the AS350 Ecureuil, the time will soon be nigh for these helicopters to be put out to pasture, and thus comes the opportunity for the SH09 to potentially become the aircraft of choice. While it is possible that other manufacturers could downgrade a twin-engine aircraft into a single-engine one, question marks hang over whether or not this would be a profitable move for them.

Kopter's first customers of the SH09 'will be partners', said Jan Nowacki, Executive Vice-President of Operations. Kopter isn't going to deliver hundreds of helicopters in the first few years. There will be time for feedback from these initial customers, with the opportunity to improve and streamline processes and services. Without data from these customers, the company is unable to progress further. "It is normal in a complex technical development process that unforeseen circumstances will appear," said Löwenstein, "and we have mitigation processes in place for when that happens."

A passion for what they are doing is apparent throughout the layers of the company, from the CEO to the Chief Safety Officer, who explained in detail the inner workings of the helicopter prototypes and the testing that was going to be taking place. Kopter is not innovating for the sake of it – the team has the experience to know what can be improved upon, and is taking the opportunity to do just that, with new technology allowing for the introduction of an aircraft that offers real mission versatility and enhanced safety features.

The EMS helicopter of the future? Maybe.

## diary dates

Send your diary dates to:
info@airmedandrescue.com

**12-14 June**
**AIRMED World Congress**
Warsaw, Poland

**18-24 June**
**50th Annual Washington States Search and Rescue Conference**
Ellensburg, Washington, US

**9-14 July**
**ALEA Expo 2018**
Airborne Law Enforcement Association
Louisville, Kentucky, US

**10-12 July**
**International Search & Rescue Conference 2018**
Kuala Lumpur, Malaysia

**7-9 September**
**SAREX 2018**
El Dorado, California, US

**19-20 September**
**The Emergency Services Show 2018**
Birmingham, UK

**1-4 October**
**American College of Emergency Physicians Annual Meeting**
San Diego, California, US

**19-20 October**
**The Pittman Course: Flight & Critical Care Paramedic Review**
Phoenix, Arizona, US

**22-24 October**
**Air Medical Transport Conference**
Phoenix, Arizona, US

**29 October**
**EMS World Expo**
Nashville, Tennessee, US

**12 November**
**Association of Air Ambulances Air Ambulance Conference**
London, UK

**Beim Gespräch in Näfels: «Die Lebensqualität in der Schweiz ist sehr hoch», sagt Andreas Löwenstein, CEO von Kopter.**
SASI SUBRAMANIAM

# Der Überflieger

Seit 18 Monaten ist der Deutsche Andreas Löwenstein CEO von Kopter, dem Helikopterunternehmern mit Sitz in Mollis. Im Interview erzählt er von seinen Ferien als Kind in den Schweizer Bergen und von turbulenten Heliflügen in Afrika.

**VON DENISE ERNI**

Das Unterschreiben fällt Andreas Löwenstein momentan etwas schwer. Grund dafür ist eine Verletzung an seinem kleinen Finger, dort trägt er eine Schiene. «Ich habe mir die Sehnen gerissen», sagt der CEO der Kopter Group AG. Löwenstein lacht und fährt dann mit der Unterschrift langsam fort. Doch, es passt.

Entspannt sitzt Löwenstein im Café «Müller» in Näfels. Begleitet wird der 55-Jährige von Cécile Vion-Lanctuit. Sie ist die Leiterin der Kommunikations- und Marketingabteilung der Firma – und Französin wie Löwenstein. Die beiden kennen einander schon lange und haben bereits vor ihrer Zeit bei Kopter zusammengearbeitet. Löwenstein hat sie zu Kopter geholt.

Löwenstein bestellt sich einen Tee und ein trockenes Brötchen. «Ich muss etwas auf die Linie achten», meint er, «denn durchs viele Röstiessen nehme ich zu schnell zu.» Vion-Lanctuit nimmt ein Birchermüesli «mit Rahm», wie sie betont. «Das macht Cécile extra», sagt er. Die beiden lachen.

**Herr Löwenstein, vor vier Monaten haben Sie Ihre Firma von Marenco Swisshelicopters in Kopter umbenannt. Wie ist der Wechsel in der Branche angekommen?**
Sehr gut. Haben wir vorher mit Chinesen oder Amerikanern gesprochen, konnten sie mit Marenco oft gar nichts anfangen, weil sie den Namen manchmal gar nicht aussprechen konnten. Heute haben wir aber eine Marke, die sofort erkannt wird und sowohl Kunden als auch Zulieferer toll finden. Der Wechsel kam zur richtigen Zeit.

**Sie sind seit 18 Monaten CEO von Kopter. Wie sieht Ihre Zwischenbilanz aus?**
2017 war ein Jahr des gewaltigen Umbaus, und die Firma ist heute in vielen Bereichen eine ganz andere im Vergleich zu dem, was sie vorher war. Als ich anfing, war sie ein Engineeringbüro, und heute gehen wir in die Richtung einer Industriefirma mit allem, was dazugehört. Wir haben die Grösse erhöht und haben heute gegen 300 Mitarbeitende. Als ich kam, waren es knapp 150. Gleichzeitig hat sich die Strategie verändert, wir sind auf dem Weg zu einem weltweiten Hubschrauberhersteller und Servicedienstleister.

*Im Januar 2017 hat Löwenstein den CEO-Posten der damaligen Firma Marenco Swisshelicopters mit Sitz in Mollis und im zürcherischen Wetzikon übernommen. Zuvor war er unter anderem bei DCNS, der französischen Naval Group, einem Schiffsystem- und Rüstungskonzern, tätig. Von 1990 bis 2010 arbeitete Löwenstein bei der Airbus-Gruppe, davon 14 Jahre bei Eurocopter, wo er für verschiedene Aufgaben zuständig war.*

**«Unsere Konkurrenzprodukte sind zwischen 30 und 40 Jahre alt.»**

**Sie haben für grosse Konzerne wie Airbus, Eurocopter und DCNS gearbeitet. Was hat Sie bewogen, den Chefposten bei Kopter zu übernehmen? Verglichen mit Airbus und DCNS ist Kopter ein eigentliches Start-up.**
Wenn man 28 Jahre lang in Riesengruppen mit teilweise bis zu 160 000 Personen gearbeitet hat, dann möchte man irgendwann einmal alles, was man gelernt hat, gebündelt anwenden. Ich hatte sehr unterschiedliche Funktionen in diesen Firmen, zum Teil mit grossen Verantwortlichkeiten, aber in solchen Firmen verbringt man oft einen Grossteil seiner Zeit damit, sich zu rechtfertigen, oder mit Streitereien mit Kollegen, was die Sache nicht voranbringt. Oft kann man Dinge nur langsam bewegen, was frustrierend ist, selbst wenn man auf der Chefetage sitzt. Aus diesem Grund hatte ich nach so einer langen Zeit Lust, alles, was ich gelernt habe, gebündelt anzuwenden, greifbare Resultate zu erzeugen. Und das ist nur in einem kleinen, agilen Unternehmen möglich.

**Sie wechseln vom schweren Tanker nun aufs Segelboot?**
*(Lacht).* Ich habe in einer Firma gearbeitet, die Flugzeugträger konstruiert, und man brauchte etwa 40 Kilometer, um das Schiff in eine Kurve zu bringen. Der Vergleich stimmt also.

*Als die Anfrage für den CEO-Posten kam, zögerte Löwenstein nicht lange mit der Zusage. Er wollte auch wieder zurück in die Luftfahrt-, speziell in die Helikopterbranche.*

**Wie wollen Sie sich mit Kopter als kleines Unternehmen weltweit behaupten?**
Das kann man nur, wenn man das richtige Produkt im richtigen Segment hat. Und wir präsentieren uns mit dem einmotorigen Turbinenhubschrauber in einem Segment, in dem es keine modernen Konkurrenzprodukte gibt. Unsere Konkurrenzprodukte sind zwischen 30 und 40 Jahre alt. Als Vergleich: Wenn ich mich an das Auto meines Vaters in den Siebzigerjahren zurückerinnere, hatte dieses nicht einmal einen Sicherheitsgurt. Und so sieht es mit unseren Konkurrenzprodukten aus. Diese Maschinen wurden in den Siebziger- und Achtzigerjahren zertifiziert. Wir sind nun die ersten, die mit einem neuen Produkt kommen. Deshalb bin ich optimistisch, dass wir in diesem weltweiten Markt gute Chancen haben, 20 bis 25 Prozent Marktanteil zu erobern.

**Woher stammen Ihre Kunden?**
Air Zermatt ist unser erster Kunde, was uns natürlich sehr freut. Bisher sind mehr als 60 Bestellungen eingegangen, der Grossteil stammt aus Europa und den USA, aber auch aus Australien, Japan und Mittelamerika. Der Hauptteil des Marktes wird in den USA sein, wir werden 50 Prozent unserer Maschinen dort verkaufen.

*Konstruiert werden die Helikopter in Wetzikon, vorgefertigt dann in Mollis. Daran will Kopter auch künftig festhalten. In naher Zukunft soll in Amerika und Asien noch eine Endfertigungsstätte entstehen. So kann vor Ort der Helikopter fertig zusammengebaut werden.*

**Werden Sie weiterhin an «Swiss made» festhalten, auch wenn Sie 50 Prozent der Maschinen in die USA verkaufen?**
«Swiss made» ist für uns ein wichtiges Marketingargument *(blickt zu Vion-Lanctuit und schmunzelt).* Davon ist auch Cécile überzeugt. Wenn man sich die Werte anschaut, die in der Schweiz hochgehalten werden: Zuverlässigkeit, Präzision, Engagement – ein Schweizer würde nie einen Kunden über die Tischkante springen lassen –, dann passt das sehr gut zu unserem Business und unseren Bedürfnissen. Unser Hubschrauber ist ein Gerät, das von Präzision und Zuverlässigkeit abhängt. Deshalb werden wir diese Werte immer hochhalten.

*Löwenstein wurde in Deutschland geboren und wuchs in Aachen auf. Nach seinem Jus- und Betriebswirtschaftsstudium zog er nach Kanada, dort spezialisierte er sich auf Luft- und Raumfahrtrecht. Danach folgte ein MBA in Frankreich, denn Löwensteins Ziel war es, in der Luftfahrtindustrie zu arbeiten. Das Fliegen hat ihn stets fasziniert. Pilot, das wollte er aber nicht werden.*

**Fliegen Sie eigentlich selber?**
Ich weiss, wie man fliegt, und ich tue es mit erfahrenen Piloten, wenn sie mich lassen, aber ich habe keine Lizenz. Wenn man Hubschrauber fliegt, braucht man wahnsinnig viel Erfahrung – sicherlich mehr als 80 Stunden im Jahr, das liegt aber zeitlich nicht drin. Ich liebe es aber, mich fliegen zu lassen.

**Und Sie haben keine Angst dabei?**
Die kommt meistens erst im Nachhinein *(lacht).* Einmal war ich in Afrika unterwegs, da wollte man mir zeigen, was der Kampfheli alles im Bauch hat. Wir kamen vor eine Brücke und der Pilot fragte: «Drüber oder drunter?» Bevor ich antworten konnte, waren wir schon unten durch. Dasselbe, als ich russische Transporthelis testen musste und wir mit voller Geschwindigkeit drei Meter über Wasser flogen und über Uferböschungen sprangen – da denkt man sich schon, komme ich noch gut nach Hause? Ich hatte einige wilde Flugerlebnisse.

**Sie sind in Deutschland aufgewachsen, lebten viele Jahre in Frankreich und arbeiten nun in der Schweiz. Gibt es Unterschiede zwischen den drei Ländern?**
In der Schweiz zu leben, ist unglaublich angenehm, hier basiert alles irgendwie auf gesundem Menschenverstand. Das ist frappierend. Sämtliche Entscheide und Kompromisse basieren darauf, und das macht das Leben hier sehr einfach. Man fühlt sich sicher, und verglichen mit dem Leben in Paris ist das Leben hier relativ stressfrei. Ich arbeite hier viel, aber es ist alles leicht, und hier verliert man nicht viel Zeit zum Beispiel mit Verwaltungsgeschichten. Die Lebensqualität ist sehr hoch.

**«In der Schweiz basiert alles irgendwie auf gesundem Menschenverstand.»**

**Sie haben an unsere Region tolle Kindheitserinnerungen …**
Und wie! Ich lernte als Vierjähriger in Graubünden Skifahren. Während zehn Jahren fuhren wir jedes Jahr zweimal nach Tschiertschen in die Ferien, also im Sommer und Winter. Das war eine wunderschöne Zeit. Wir mieteten ein altes Haus und holten den Schlüssel jeweils beim Hauswart in der Kantonsschule in Chur ab. Und ich erinnere mich noch heute an die Ovomaltine und den Nussgipfel, die es jeweils nach dem Skifahren gab. So konnte ich mich immer wieder aufwärmen.

*In der Zwischenzeit reicht es nicht mehr für Skiferien in der Südostschweiz. Weil Löwensteins Lebensmittelpunkt fast 30 Jahre lang in Frankreich lag, besitzt er in den Bergen nahe dem Genfersee auf der französischen Seite ein kleines Chalet, das er selber gebaut hat. Darin besteht seine Erholung, in physischer Arbeit, im Häuserbauen oder Umbauen oder im Gartenschaufeln. Ruhig in einer Ecke liegen, das kann der Manager hingegen nicht.*

**Wo ist Ihre Heimat?**
Ich fühle mich dort wohl, wo ich ein gutes Nest bauen kann, dort schlage ich dann auch meine Wurzeln. Wir lebten 28 Jahre in Frankreich, und jetzt lebt meine Familie respektive leben meine Frau Claire und ich in Küsnacht. Unsere drei Kinder, Adrian, Clara und Julia, sind mittlerweile erwachsen und leben nicht mehr zu Hause. Sie studieren derzeit alle und sind verstreut auf der ganzen Welt *(lacht).*

Front

# Take-off für den Flugplatz

Die Südostschweiz
von Daniel Fischli
23 June 2018
252 words
German
SUDOS
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Die Gemeindeversammlung Glarus Nord steht hinter der Strategie des Gemeinderates.

Der Gemeinderat Glarus Nord kann am Flugplatz Mollis 22 000 Quadratmeter Boden verkaufen. Diese Kompetenz hat ihm gestern die Gemeindeversammlung mit einer klaren Mehrheit erteilt. Rückweisungs- und Änderungsanträge hatten keine Chance. Der Boden geht an die vier bereits heute am Flugplatz ansässigen Firmen **Kopter**, Heli-Linth, Rega und Ecoflight. Sie alle können am Rollweg Neubauten verwirklichen, sobald das Umnutzungsverfahren für den Flugplatz abgeschlossen ist.

Das Geschäft an den Gemeinde- rat zurückweisen wollte Alexandra Bärtsch. Sie verlangte, vor dem Verkauf des Bodens müsse das Betriebsreglement für den Flugbetrieb vorliegen. «Wir müssen wissen, unter welchen Bedingungen wir das Land verkaufen», argumentierte Bärtsch. Sie konnte damit aber nur wenige der gut 300 Stimmbürger in der Näfelser Lintharena überzeugen.

Landrat Emil Küng stellte im Namen der SVP einen Änderungsantrag zum Rückkaufsrecht der Gemeinde: Der Bodenpreis bei einem Rückkauf solle (indexiert) dem heutigen Verkaufspreis entsprechen. Küng wurde durch Landrätin Priska Müller von den Grünen unterstützt. Auch dieser Antrag fand bei der Versammlung keine Gnade. Und schliesslich beantragte Albert Curiger ebenso erfolglos, der Boden solle nicht verkauft, sondern im Baurecht abgegeben werden.

Für die Vorlage und die in Aussicht stehenden Arbeitsplätze machten sich im Namen der SP Benjamin Kistler und FDP-Landrat Roger Schneider stark.

Neuer GPK-Präsident

Als neuer Präsident der Geschäftsprüfungskommission wurde Fridolin Staub (SVP) gewählt, der ohne Konkurrenz antreten konnte. Staub löst Fredo Landolt (CVP) ab, der aus gesundheitlichen Gründen nach zwei Jahren im Amt zurücktritt

Region

# Werben für den Landverkauf; Die Glarner Industrie wirbt für den Bodenverkauf an die Betriebe auf dem Flugplatz Mollis. Am Wochenende haben die Flugplatz-Unternehmen zudem ihre Visionen und Projekte der Bevölkerung vorgestellt.

Die Südostschweiz
13 June 2018
489 words
German
SUDOS
7
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Die Glarner Handelskammer setzt sich für die Bauprojekte am Flugplatz in Mollis ein. Der Dachverband der Glarner Industrie- und Gewerbeunternehmen ersucht die Stimmberechtigten von Glarus Nord, das entsprechende Gemeindeversammlungsgeschäft am 22. Juni gutzuheissen.

«Die Umsetzung dieser Projekte stärkt den Flugplatz als wichtigen Wirtschaftsstandort», schreibt die Handelskammer in ihrer neusten Mitteilung. Die Unternehmen **Kopter** Group AG, Ecoflight GmbH, Heli Linth AG sowie die Rega seien bereits am Flugplatz ansässig und könnten sich durch ihre Bauprojekte nachhaltig weiterentwickeln. Die bestehenden Arbeitsplätze würden dadurch gesichert. «Ebenso können mindestens 50 neue, hochqualitative und wertschöpfende Stellen kurzfristig geschaffen werden», heisst es weiter.

**Kopter** «wegweisend»

Vor allem die **Kopter** Group AG bedeute für den Kanton Glarus eine Jahrhundertchance. Denn: «Der erste jemals in der Schweiz hergestellte Helikopter steht kurz vor dem Markteintritt und soll im kommenden Jahr erstmals an nationale und internationale Kunden ausgeliefert werden.» **Kopter** plane, die strategischen Kernaktivitäten des Unternehmens in der Region Glarus anzusiedeln.

Darunter fallen die industrielle Fertigung, Endmontage, Planung und Steuerung der weltweiten Ersatzteillogistik sowie die Aus- und Weiterbildung von Technikern und Piloten. «Dies bringt mittelfristig eine bedeutende wirtschaftliche Entwicklung mit einer mittleren dreistelligen Zahl an Mitarbeitenden», so die Glarner Handelskammer.

Auch indirekte Wertschöpfung

Die Bauprojekte der vier Unternehmen lösen direkt Investitionen von über 20 Millionen Franken aus. Das komme zahlreichen Glarner Unternehmen zugute. Ebenso sei mit einer nicht zu unterschätzenden dauerhaften indirekten Wertschöpfung bei weiterem Gewerbe wie Detailhandel, Hotellerie oder Gastronomie zu rechnen.

Damit Mollis vom Verkehr entlastet wird, ist für die Glarner Handelskammer die Planung und Realisierung der Spange Netstal «sehr wichtig und muss nun vom Kanton prioritär behandelt werden».

Visionen vorgestellt

Bereits am Wochenende haben die Flugplatz-Untermehmen Werbung in eigener Sache gemacht. Am Samstag fand im **Kopter**-Hangar in Mollis eine Orientierungsveranstaltung zur Umnutzung des Flugplatzes statt. Dabei stellte die Mollis Airport AG ihre Visionen und Projekte der Bevölkerung vor.

Der Anlass ist laut Thomas Walt gut über die Bühne gegangen: «Es hat alles bestens geklappt, gegen 1000 Besucher informierten sich über die verschiedenen Flughafenbetriebe in Mollis.» Regierungsrätin Marianne Lienhard überbrachte die Grüsse der Glarner Regierung.

Das Interesse ist gross

Neben Personen aus Politik und Wirtschaft sind auch Gegner der Bauprojekte eingeladen worden. Eine der häufigsten Fragen aus der Bevölkerung war jene nach der künftigen Velo- und Fusswegführung: «Der Weg wird nicht verschwinden, sondern gemäss Sicherheitsauflagen anders geführt werden», erklärt Walt. Generell habe die Bevölkerung an Informationen zur Zukunft der geplanten Infrastruktur auf dem Flugplatz-Areal grosses Interesse gezeigt.

An der Gemeindeversammlung vom 22. Juni entscheidet das Stimmvolk von Glarus Nord unter anderem über die Teilrevision Zonenplan Mollis sowie die Kompetenzerteilung an den Gemeinderat betreffend Veräusserung von Bauland innerhalb des Flugplatzperimeters. (eing/tw)

Grusswort: Regierungsrätin Marianne Lienhard bei ihrer Ansprache.

Viele Besucher: Gross und Klein interessieren sich für die Flugwelt.Bilder Jarryd Lowder

GENERAL AVIATION

# Next Kopter To Fly in July

by Mark Huber - May 31, 2018, 6:02 AM

The third Kopter SH09 single-engine prototype, aircraft P3, likely will fly in July following a three-month schedule delay triggered by a supplier problem. "It was a conscious decision," Kopter chief technology officer Michele Riccobono told **AIN** this week. "We discovered a quality issue with a dynamic system component from a supplier that failed our incoming inspection test."

Riccobono said the other two Kopter prototypes have completed their flight testing and that P2 is being retained for ground testing of the drive system. Flight tests of P3 will initially be conducted in Sicily. Riccobono said the first few flight hours would be devoted to flight envelope expansion and investigation and handling, development testing, and a few certification tests. He said the majority of the certification testing would be handled by the first fully representative production aircraft, PS4, scheduled to join the test fleet in the third quarter of 2018 and fly into 2019. "We wanted to push the first flight of PS4 a little bit to the right to benefit from the initial flights of P3. If there are some last-minute changes we want to put into PS4 we will have the time to do it," he said. Riccobono added the company took advantage of P3's first flight delay to further refine PS4.

The company also continued all of its non-flight development, test, and certification activity, which included ground/bench testing components, systems, and subsystems including the gearbox and main rotor hub; conducting all of the fatigue tests required by EASA to get P3 in the air; and implementing design improvements on PS4. Riccobono said the company also is building a full-scale avionics system integration rig that will house the components of the new Garmin G3000H touchscreen avionics system. Garmin announced last week that Kopter would be an initial customer for the new G3000H, which brings IFR glass panel sophistication and capabilities to Part 27 helicopters.

"We have asked Honeywell [supplier of the HTS900 engine] to provide a Fadec connected to the engine simulator so that we can integrate the avionics to the engine, which is one of the high-risk items. Whenever you integrate the engine to the avionics you always find issues. Thanks to this fully representative engine simulator we can mitigate much of the risk well ahead of putting this system on PS4," he said. "On a components system testing level, we are on a good track."

Riccobono said the company is gearing up for certification and customer deliveries next year, even as it completes its flight test program. "We are in parallel ramping up the production line. The idea is to start the build-up of PS4 together with the [customer] civil aircraft. Our target is to establish single-digit deliveries in 2019. To do that we need to parallelize things. While we are completing certification we will already have the first few production aircraft in the pipeline," he said.

Kopter's order book for the $3.5 million all-composite helicopter currently stands at more than 120, which a company spokesman told **AIN** represents the first three years of production. The company currently employs 260, 150 of whom are working in engineering, development, testing, and design.

ROTORCRAFT

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# Helitech returns with focus on innovation and emerging technologies

Posted on June 11, 2018; Storm Communications Press Release

Helitech International will provide an invaluable networking, learning and sourcing experience for the European rotorcraft community when its doors open in Amsterdam this October. Run in association with the European Helicopter Association (EHA) and co-located with MRO Europe, the event will bring together leading suppliers, OEMs and some of the industry's brightest minds, enabling operators to plan for a successful future.

The RAI Amsterdam Exhibition and Convention Centre will play host to this year's free-to-attend Helitech International from October 16 to 18. In attendance will be 150 companies from across the world — including leading OEMs Bell (formerly Bell Helicopter), Leonardo, Airbus, and Kopter (formerly Marenco).

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The event's conference program will provide insights on the impact of Brexit negotiations on the industry, new market opportunities for operators and OEMs in the face of contracting oil-and-gas markets and the latest technological innovations, as well as developments in safety and future policies for shared air space.

A number of new show features will also be introduced to add value to visiting operators.

Alongside the major OEMs, dozens of suppliers that represent the entire rotorcraft supply chain will showcase the latest solutions and technologies, comprising aircraft interiors, avionics and navigation systems to communication equipment, night vision, engines and leasing. And to help time-poor visitors navigate their way around the exhibition, Innovation Trails will launch in 2018 — each highlighting solutions that can overcome specific business challenges.

Among the new exhibitors taking part this year are Luminator Technology Group, which will showcase its innovative interior and exterior lighting technology, and TracPlus Global Ltd, which will present its aviation grade devices that offer global voice, two-way messaging, as well as event and location tracking.

HeliSpeed, the U.K.-based pilot services company, will be on hand to talk training and recruitment, while CAE and ADAC HEMS Academy GmbH will reveal computer-based training tools, such as virtual and augmented reality (VR/AR), that can offer new, innovative ways to train and refresh pilot education.

Helitech International 2018 will also see the launch of its first Hosted Buyer Program. The initiative will provide suppliers with direct access to international buyers from key markets, with the opportunity to schedule face-to-face meetings ahead of the show, ensuring they get the most from their

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Helitech International 2018 will also see the launch of its first Hosted Buyer Program. The initiative will provide suppliers with direct access to international buyers from key markets, with the opportunity to schedule face-to-face meetings ahead of the show, ensuring they get the most from their visit to Amsterdam in October.

Alongside the exhibition, a refreshed conference program will explore the latest trends and issues facing the industry, including the importance of training and preparing for the anticipated skills shortage.

Recent research has revealed 64 percent of rotorcraft operators foresee a difficulty in hiring qualified pilots, while 54 percent are concerned it will affect the growth of their operations. Therefore, Helitech International will have a focus on how the industry can help attract people and train them into skilled professionals.

Over the coming months, the organizer will announce several new conference theaters that will be open to visitors during their trip to the show, each focusing on specific challenges facing the rotorcraft industry. Alongside its returning schedule of inspirational content, Helitech International will welcome insights from leading UAV organizations, to educate and inform visitors and exhibitors on the opportunities presented by drones, and how the technology can enhance businesses in the rotorcraft industry.

The full program of speakers and conference sessions will be announced soon.

Yet another new feature of this year's event is a business matchmaking service designed to encourage networking and meetings on the show floor. The service will enable visitors to discover new companies and technologies, and connect with and organize meetings at the show, to encourage collaboration and foster new partnerships. The matchmaking service will also provide exhibitors with exposure to an expanded network of future customers and collaborators.

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"This year's event will reflect what the industry is telling us," said Teresa Heitor, event manager, Helitech International. "They want to see more innovation and technology at Helitech International, as well as having the chance to learn about trends and how to overcome obstacles to their future growth. The increasing focus on new opportunities and growing markets will enable visitors to explore additional avenues of revenue and potential areas for business expansion.

"We have already sold 97 percent of stand space and extended our floor plan to facilitate the new exhibitors and features we're launching at this year's show. This includes 23 new exhibitors joining us this year so far and a number of new initiatives that will enable rotorcraft professionals to improve their at-show experience. We're confident that the changes we have made to the 2018 show will make it an even more valuable experience for the European helicopter industry."

For more information or to register to attend, click here.

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Congratulations to last week's photo contest winner, Robert Niederwolfsgruber! Here's our next round of finalists. To vote, just "like" your favorite by Tuesday, July 3.

# Kopter announces Garmin G3000H for Baseline of SH09 Helicopter

**28 May, 18, Source: Kopter**

Kopter Group AG is proud to announce that the newly launched Garmin G3000H will be integrated into the SH09 single turbine helicopter from first deliveries.

To benefit operators and owners alike, the G3000H will even come in the standard baseline of the helicopter, ensuring that the SH09 provides the highest level of avionics on the market. The SH09 will feature dual landscape-oriented displays and a single touchscreen controller.

"The G3000H will ease the workload of SH09 pilots while providing best-in-class situational awareness. This will enable a higher level of safety for every mission, the core principle behind the design of our helicopter." says Michele Riccobono, Kopter Executive Vice President Technology.

"We are excited that Kopter is the first to announce the G3000H integrated flight deck on the SH09 helicopter," said Carl Wolf, Garmin vice president of aviation marketing and sales. "The G3000H merges modern technologies with an exceptional feature set that reduces pilot workload and improves situational awareness so helicopter pilots can make the most informed decisions while operating in high workload conditions."

Representatives of both Kopter and Garmin will be on-site at EBACE 2018 in Geneva on Day 2, 30 May on Garmin's booth (J89) from 13:00 to 14:00 local time to jointly answer questions.

Tags: Civil, G3000H, Garmin, Kopter, News, SH09

**Related Posts**

- Bell delivers 100th 505 JetRanger X

# Kopter receives Aerosuisse Award

**25 May, 18, Source: Kopter**

Kopter has been granted this year's Aerosuisse Award for its pioneering role in the construction of the first new and innovative light helicopter in Switzerland. Aerosuisse president Thomas Hurter gave this recognition to Andreas Loewenstein, Kopter CEO, at the 50th General Assembly of the Swiss Aerospace Association, which took place on 18 May.

M. Hurter mentioned at this occasion: "This helicopter is proof of the innovative capacity of the Swiss aviation industry and an example of progress in the environmentally friendly construction of energyefficient aircraft".

Meanwhile Kopter is pleased to take part in the 50th anniversary of Air Zermatt with the second prototype of its SH09. As a launch customer of the SH09, Air Zermatt is proud to present their future helicopter to all employees and participants this weekend at Heliport Raron, Switzerland.

Tags: Air Zermatt, Awards, Civil, Kopter, News, SH09

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# Kopter participates in Air Zermatt's 50 years jubilee event

kopter

Kopter is pleased to take part in the 50th anniversary of Air Zermatt with the second prototype of its SH09. As a launch customer of the SH09, Air Zermatt is proud to present their future helicopter to all employees and participants this weekend at Heliport Raron, Switzerland.

**About Kopter Group AG**
We develop, produce and support a new generation of helicopter. Our 250 talented team members are based near Zürich, with production and assembly facilities in Mollis and Näfels.
Our first model, the single-turbine SH09, outperforms its peers through increased modularity, modern electronic systems, and a larger cabin and cargo hold. It delivers safety, performance and comfort at low operating costs. It's built for missions accomplished, from the most demanding to the everyday.

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# INTERVIEW: ANDREAS LÖWENSTEIN,
## CEO OF KOPTER

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# ANDREAS LÖWENSTEIN, CEO OF KOPTER

# ANDREAS LÖWENSTEIN, P-DG DE KOPTER

**HELICOPTER INDUSTRY MET WITH ANDREAS LÖWENSTEIN, CEO OF KOPTER, DURING HELI EXPO 2018 IN LAS VEGAS**

**HELICOTPER INDUSTRY A RENCONTRÉ ANDREAS LÖWENSTEIN, P-DG DE KOPTER, À L'OCCASION DU SALON HELI EXPO 2018 DE LAS VEGAS**

BY/PAR FREDERIC LERT

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# ANDREAS LÖWENSTEIN

## CEO OF KOPTER
## PDG DE KOPTER

A successful exhibition for the Swiss helicopter manufacturer, with the signing of 23 firm orders and 11 options, and which resulted in a hectic schedule of its leader. He did however find the time to speak to us to sum up the current situation for his company. After several years of training and warming up, the monoturbine SH09, weighing 1.4 tons empty, has finally stepped into the ring. The fight between the sector's heavyweights has only just begun…

***You announced 23 firm orders and 11 options during the Expo. What are the numbers looking like now?***

At the end of Heli Expo we have more than 160 firm sales and letters of intent. This total includes more than 30 firm sales with down payment and 29 Memorandum of Agreement. It was also important to me that these different sales are made to launch customers who are well established companies, flying a lot and with a good maintenance infrastructure. This has been done with operators like Helitrans in Norway, Alpin Lift or Air Zermatt in Switzerland. These first customers will use our aircraft intensively, in a JAR45 environment, with mechanics and professional pilots of very high level. And then, we also targeted operators with very large fleets, like Papillon or Paradise Helicopters. Our sales were all made to leading companies and major operators.

***What about distributors? Do you have ambitions to create a global network?***

We already have six authorized distributors and we are going to go up to fifteen-or-so in the first instance. We will be present almost everywhere in the world - Asia, Europe, North America, South Africa - except, for the moment, in Russia. We want to be on par with the global single-engine market leaders:

Un salon synonyme de succès pour l'hélicoptériste suisse, avec la signature de 23 ventes fermes accompagnées de 11 options, et qui s'est traduit par un emploi du temps échevelé pour son patron. Celui-ci a pourtant trouvé le temps de nous recevoir pour évoquer la situation actuelle de sa société. Après plusieurs années d'entraînement et d'échauffement, le monoturbine SH09, 1,4 tonne à vide, est enfin monté sur le ring. Le match contre les poids-lourds du secteur ne fait que commencer…

***Vous avez annoncé pendant le salon 23 ventes fermes et 11 options. Où en est aujourd'hui votre carnet de commandes ?***

Nous totalisons à la fin d'Heli Expo plus de 160 ventes fermes et lettres d'intention. Ce total comprend notamment plus de 30 ventes fermes avec versement d'un acompte et 29 Mémorandum of Agreement (protocole d'accord). Il était également important pour moi que ces différentes ventes se fassent auprès de clients de lancement qui soient des sociétés bien établies, volant beaucoup et avec une bonne infrastructure de maintenance. C'est chose faite avec des opérateurs comme Helitrans en Norvège, Alpin Lift ou Air Zermatt en Suisse. Ces premiers clients utiliseront nos appareils intensivement, dans un environnement JAR45, avec des mécaniciens et des pilotes professionnels de très bon niveau. Et puis, nous avons également visé des opérateurs disposant de flottes très importantes, comme Papillon ou Paradise Helicopters. Nos ventes ont donc toutes été réalisées auprès de sociétés de premier plan et de grands opérateurs.

***Qu'en est-il des distributeurs ? Avez-vous l'ambition de créer un réseau mondial ?***

Nous avons déjà six distributeurs agréés et nous allons monter dans un premier temps à une petite quinzaine. Nous en aurons à peu près partout dans le monde – Asie, Europe, Amérique du Nord, Afrique du sud –, sauf, pour l'instant, en Russie.

We will not be a niche player. Our order book reflects this market very well, with approximately 50% of demand from North America.

***Among the various markets open to single-engine aircraft, which is your priority?***

As soon as it is put into service, our aircraft will have the various tools enabling it to fulfill the most important missions: winch, medical equipment, lifting hook ... And this versatility is already reflected in our sales: we have tour operators, specialists in aerial work or EMS [their names are for the moment kept confidential, ed.]. We still lack police forces that use single engines in the United States. These seek above all excellent visibility to the ground, large cabins and power. So many of the things we achieve at the highest level with the SH09. The police have not had the opportunity to try our aircraft yet, but I am very optimistic because we are quite credible in the missions we are aiming for.

Nous voulons disposer d'une assise en ligne avec le marché mondial des monomoteurs : nous ne seront pas un « niche player ». Notre carnet de commandes reflète d'ailleurs très bien ce marché, avec environ 50 % des besoins en Amérique du Nord.

***Parmi les différents marchés ouverts aux monomoteurs, quelle est votre priorité ?***

Dès sa mise en service, notre appareil disposera des différents outils lui permettant de remplir les missions les plus importantes : treuil, aménagement médicalisé, crochet de levage… Et cette polyvalence se reflète déjà dans nos ventes : nous avons des opérateurs touristiques, des spécialistes du travail aérien ou de l'EMS [leurs noms sont pour l'instant gardés confidentiels, ndr]. Il nous manque encore des polices qui utilisent des monomoteurs aux Etats-Unis. Celles-ci recherchent avant tout une excellente visibilité vers le sol, du volume en cabine et de la puissance. Autant de choses que nous portons au meilleur niveau avec le SH09. Les services de police n'ont pas encore eu l'occasion d'essayer notre appareil, mais je suis très optimiste, parce que nous sommes tout à fait crédibles dans les missions que nous visons.

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***The medical transport market (EMS) is estimated to have 2,400 aircraft in the United States alone, but it is also highly competitive. How do you plan to approach it?***

EMS contracts are very competitive in the United States, since they are challenged every three or four years. If we can prove that the SH09 is THE EMS machine par excellence, which I believe, and a massive upward turn in our favor is possible. Today, the most purchased aircraft in this segment are the H135 and H145. Why? Not because they are twin-engine, which is a handicap in this case, but because operators are looking for a large cabin. But with the SH09, we offer practically an H145 sized-cabin for the cost of operating a single engine. SH09 will also be IFR as soon as it is placed on the market.

***Did you suffer or even lose sales due to the weak Dollar?***

Customers see the difference that comes with our single-engine aircraft, with a bigger cabin and better range than the competition. The advantages that we put forward can justify looking at the price last. And anyway, our price is still very competitive, because we are not affected by the flux in exchange rates: we have set up a system where we buy components in the three currencies – the Euro, the Dollar and Swiss francs. The engine and avionics are, for example, paid for in Dollars, which is already a major part of the purchase price of the aircraft.

***Where are you up to in developing the machine?***

We have completed more than 70 hours of flight since the beginning of the program with the first two prototypes, while accumulating several hundred hours of bench tests: the anti-torque transmission / rotor assembly has run for more than 2,000 hours, the transmission / main rotor assembly over 500 hours ... The PS4, which will be the pre-production unit, will be delivered at the end of the summer and will participate with the PT3 in the certification flights that will take place in Sicily. We plan to stay on the Italian island for about a year, with a maintenance infrastructure that can accumulate nearly 1000 flying hours on site.

***Le marché du transport sanitaire (EMS) est évalué à 2 400 appareils pour les seuls Etats-Unis, mais aussi âprement disputé. Comment comptez-vous l'aborder ?***

Les contrats EMS sont très compétitifs aux Etats-Unis, puisqu'ils sont remis en question tous les trois ou quatre ans. Si nous arrivons à prouver que le SH09 est LA machine EMS par excellence, ce que je crois, un mouvement massif en notre faveur est possible. Aujourd'hui, les appareils les plus achetés sur ce segment sont les H135 et H145. Pourquoi ? Non pas parce qu'il s'agit de bimoteurs, ce qui est plutôt un handicap en l'espèce, mais parce que les opérateurs recherchent une vaste cabine. Or avec le SH09, nous proposons pratiquement une cabine de H145 pour le coût d'exploitation d'un monomoteur. Le SH09 sera également IFR dès sa mise sur le marché.

***Avez-vous pâtit ou même perdu des ventes à cause d'un dollar faible ?***

Les clients voient bien la différence qu'apporte notre machine monomoteur, avec une cabine plus grande et une meilleure autonomie que la concurrence. Les avantages que nous mettons en avant peuvent justifier que l'on ne regarde le prix qu'en dernier. Et quoi qu'il en soit, notre prix reste très compétitif, parce que nous subissons peu les effets des taux de change : nous avons mis en place un système grâce auquel nous achetons des composants dans les trois monnaies – euro, dollar et franc suisse. Le moteur et l'avionique sont, par exemple, payés en dollars, ce qui constitue déjà une importante part du prix d'acquisition de l'appareil.

***Où en êtes vous dans le développement de la machine ?***

Nous avons réalisé plus de 70 heures de vol depuis le début du programme avec les deux premiers prototypes, tout en accumulant plusieurs centaines d'heures d'essais au banc : l'ensemble transmission/rotor anti-couple a tourné plus de 2 000 heures, l'ensemble transmission/rotor principal plus de 500 heures… Le PS4, qui sera l'appareil de présérie, sera livré à la fin de l'été et participera avec le PT3 aux vols de certification qui se dérouleront en Sicile. Nous prévoyons de rester sur l'ile italienne environ un an, avec une infrastructure de maintenance permettant d'accumuler sur place près de 1 000 heures de vol.

***When do you envisage getting the certificate?***

The certification consists of three parts: the documentary part, the materials and components tests and the flight tests, the aim being that these three parts converge in advance of the EASA work. AESA certification, along with FAA certification, are both envisaged during the first months of 2019.

***Where are you up to in manufacturing terms?***

Our manufacturing plan is similar to that of a two-stage rocket: the first stage, installed in a first plant, consists of the manufacture of pre-assembled subassemblies: blades, hydraulic and dynamic components. The tools are in place or will soon be - we are calibrating the operations. A stone's throw from this first building, the second area consists of a hall of 4,200m2, with an assembly capacity of a hundred aircraft a year, which we have just inaugurated on February 1st. This building, located in Mollis [about fifty kilometers east of Zurich, ed.], will also host training and flight test activities. The first series helicopters will come out of Mollis next year.

***Would you like to set up assembly lines elsewhere in the world?***

Yes, absolutely. We want to do it like a famous Swedish furniture manufacturer: we will manufacture kits, this is the first floor of the rocket, which can be sent to assembly lines (FAL) anywhere in the world. Some will cross the street and go to the Mollis FAL. But others will be able to go to the United States as early as 2021, and to Asia two years later. We are having ongoing discussions, and all that will depend on the market. It is obvious that if anyone wants to invest in Kopter, we will favor them when installing a final assembly line.

***Pour quand la certification est-elle prévue?***

La certification comprend trois volets : la partie documentaire, les essais des matériaux et de composants et les essais en vol, l'objectif étant que ces trois volets finissent par converger en préalable aux travaux de l'AESA. La certification AESA, et dans la foulée FAA, sont toutes deux envisagées pendant les premiers mois de 2019.

***Où en êtes-vous au niveau industriel ?***

Notre schéma industriel est semblable à une fusée à deux étages : le premier étage, installé dans une première usine, est constitué de la fabrication de sous-ensemble pré-assemblés : pales, composants hydrauliques et dynamiques. Les outillages sont en place ou vont bientôt l'être – nous sommes en train de calibrer les opérations. A un jet de pierre de ce premier bâtiment, le deuxième étage est constitué par un hall de 4 200m2, avec une capacité d'assemblage d'une centaine d'appareils par an, que nous venons d'inaugurer, le 1er février dernier. Ce bâtiment, installé à Mollis [à une cinquantaine de kilomètres à l'est de Zurich, ndr], accueillera également des activités de formation et d'essais en vol. Les premiers hélicoptères de série sortiront de Mollis l'an prochain.

***Avez vous l'ambition de mettre en place des chaînes d'assemblage ailleurs dans le monde ?***

Oui, absolument. Nous voulons faire comme un célèbre fabriquant de meubles suédois : nous allons fabriquer des kits, c'est le premier étage de la fusée, qui pourront être envoyés vers les lignes d'assemblage (FAL) partout dans le monde. Quelques-uns traverseront la rue et iront vers la FAL de Mollis. Mais d'autres pourront partir vers les Etats-Unis dès 2021, et en Asie deux ans plus tard. Nous avons des discussions en cours, et tout cela dépendra du marché. Il est évident que si quelqu'un veut investir dans Kopter, nous le favoriserons au moment d'installer une ligne d'assemblage final.

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***Where are you thinking of setting up in the United States?***

In one of the country's two major aeronautical centers, where there is qualified labor and you are in close proximity to major customers...

***Where and how are you going to recruit the manpower necessary for your rise to power?***

We recruited a lot in 2017 (112 people to be precise). And we expect to add about a hundred people to our workforce in 2018. We will continue to grow in the coming years, but the numbers will not be as dramatic. From the point of view of recruitment, it is true that the Swiss aeronautical industrial fabric is very narrow, being limited to a few thousand people. But we know how to adapt: we will train many employees ourselves. We will set up a «Kopter learning system», recruiting a mix of Swiss nationals and foreigners. We have the means of attracting talent and the Swiss system is attractive too: both financially and fiscally, and the administration runs like clockwork. It does not take more than ten minutes in a town hall to settle all immigration administrative issues. Our central geographical position in Europe, between France, Germany, Italy - and even beyond - is also an asset: our 263 employees are of 19 different nationalities. And then, it is necessary to defeat a conventional wisdom: the idea of a high production cost for advanced technological goods in Switzerland is a myth. Income tax is limited to 20%, compared to much more in France: so we can pay higher wages, it's that simple. Corporate tax levels are also very low.

***Où pensez-vous vous installer aux Etats-Unis ?***

Dans l'un des deux grands centres aéronautiques du pays, là où il y a de la main d'œuvre qualifiée et à proximité des grands clients…

***Où et comment allez vous recruter la main d'œuvre nécessaire à votre montée en puissance ?***

Nous avons beaucoup recruté en 2017 (112 personnes très précisément). Et nous pensons ajouter une centaine de personnes à nos effectifs en 2018. Nous continuerons à monter en puissance au cours des prochaines années, mais les chiffres ne seront pas aussi spectaculaires. Du point de vue du recrutement, il est vrai que le tissu industriel aéronautique suisse est très étroit, se limitant à quelques milliers de personnes. Mais nous savons nous adapter : nous allons former beaucoup de salariés nous-mêmes. Nous allons mettre en place un « système d'apprentissage Kopter », en recrutant un mélange de Suisses et d'étrangers. Nous avons les moyens d'attirer les talents et le système suisse est bien fait : il est attrayant financièrement, fiscalement et l'administration marche comme une horloge. Il ne faut pas plus de dix minutes en mairie pour régler toutes les questions administratives d'immigration. Notre positionnement géographique central en Europe, entre France, Allemagne, Italie – et même au-delà, d'ailleurs – est aussi un atout : nos 263 salariés sont de 19 nationalités différentes. Et puis, il faut battre en brèche une idée reçue : l'idée d'un coût de production élevé en Suisse dans la haute technologie est un mythe. Les charges sociales sont limitées à 20 %, contre beaucoup plus que cela en France : on peut donc verser des salaires plus élevés, voilà tout. Les impôts sur les sociétés sont aussi très minimes.

Cockpit

# Cockpit

Das Schweizer Luftfahrt-Magazin Nr. 4/April 2018

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Monatsinterview

# «Der Markt wartet auf uns»

Foto: Rino Zigelig

Andreas Löwenstein ist seit 1. Januar 2017 CEO von Kopter.

Der frühere Manager von Eurocopter, Andreas Löwenstein, ist seit 1. Januar 2017 CEO von Kopter – jenes Schweizer Unternehmen, das mit dem einmotorigen Helikopter SH09 die Welt erobern will. Finanziell schien der Leichthelikopter lange Zeit auf der Kippe zu stehen. Nun gewinnt er aber immer mehr Interessenten. Die Maschine soll Anfang 2019 zertifiziert werden und anschliessend in Serienproduktion gehen.

***«Cockpit»: Herr Löwenstein, Sie waren an der Heli-Expo in Las Vegas. Welche neuen Erkenntnisse hat Kopter dort gewonnen?***

**Andreas Löwenstein:** Der Markt wartet auf uns. Das Interesse ist riesengross, alle warten ungeduldig auf unseren Helikopter – auf die neue Generation des einmotorigen Helikopters.

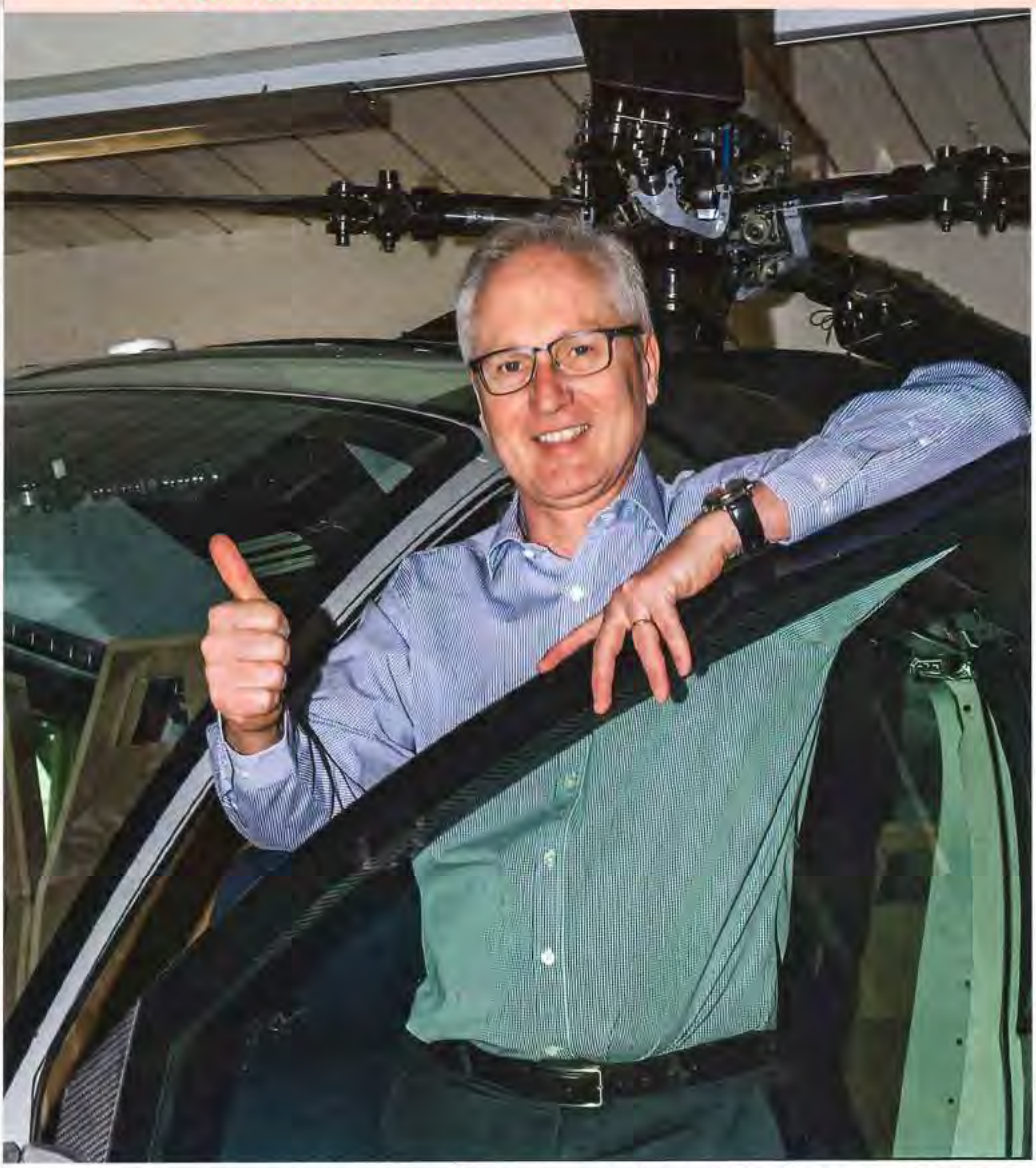
***Weshalb erzeugt der SH09 eine solch grosse Resonanz? Der Helikopter wird ja nicht neu erfunden.***

Der Markt ist für ganz neue, futuristische Projekte noch nicht bereit, ganz einfach deshalb, weil man sie nicht zertifizieren kann. Aber der Markt wartet seit Jahren schon auf einen neuen Helikopter im Light Single-Segment, weil seit Jahrzehnten tatsächlich nichts Neues erfunden wurde.

***Das heisst, die grossen Keyplayer wie Bell oder Airbus Helicopters haben nichts in der Pipeline?***

In gewisser Weise ist dem so. Die jetzige Helikopter-Generation ist 30 bis 40 Jahre alt und der Markt erwartet wie in anderen Segmenten auch Produkterneuerungen mit neuen Immisionswerten und neuen Technologien, die die Sicherheit erhöhen.

# Monatsinterview



Andreas Löwenstein (55), in Deutschland geboren, ist französischer Staatsbürger, Betriebswirt und Jurist. Bevor er in der Helikopterbranche tätig wurde, arbeitete er auch in der U-Boot-Branche. Die Aufnahme zeigt ihn vor dem P1.

***Es fällt auf, dass Ihr Helikopter viele Vorschusslorbeeren geniesst, bevor der erste überhaupt verkauft ist. Warum hat es so lange gedauert, bis jemand einen neuen Helikopter bauen wollte?***

Wenn sich zwei Anbieter den Markt teilen, ist der Druck gering, ständig Neuheiten präsentieren zu müssen. Da die Marktkonstellation zwischen Bell und Eurocopter – heute Airbus Helicopters – seit Jahrzehnten stabil ist, gab es für die beiden Grossen keinerlei Antrieb, die Modellpalette zu erneuern.

***Ist das nicht ein Widerspruch zum Bereich der Flächenflugzeuge, wo dauernd neue Modelle auf den Markt kommen?***

Auch Boeing und Airbus mussten sich erst daran gewöhnen, dass mit Embraer und Bombardier zwei neue Player in den Markt der Regionaljets eindrangen. Erst dann wurden sie aktiv.

***Wer soll den neuen Helikopter SH09 vermarkten? Wenden Sie sich an einen der «Grossen»?***

Nein. Wir haben ein hervorragendes Netz und kennen sämtliche Vertriebsorganisationen. Wir gehen davon aus, dass wir unseren Markteintritt selber verdienen und erobern können. Wir schliessen die Verträge eigenständig ab und bieten unseren Helikopter schon heute selber an.

*«In Kürze wird der Prototyp 3 (P3) fliegen. Wir hoffen, ihn ab Ende April intensiven Flugtests unterziehen zu können.»*

***Die Prototypen des SH09 befinden sich seit einiger Zeit in der Erprobung. Was braucht es noch, bis der SH09 zertifiziert ist?***

Wir haben unser DOA (design organisation approval) erhalten, was der erste Schritt ist, um eine Zertifizierung erfolgreich durchführen zu können. Der nächste Schritt wird das POA (production organisation approval) beinhalten. Ohne das POA dürfen wir gar keine Maschine produzieren.

Danach folgt im Frühjahr 2019 die Typenzertifizierung. Mit dem Prototyp 2 haben wir alle Tests durchgeführt, die man machen kann. In Kürze wird der Prototyp 3 (P3) fliegen. Wir hoffen, ihn ab Ende April intensiven Flugtests unterziehen zu können.

***Mit welchem Typ wollen Sie die Zertifizierung durchführen?***

Mit dem P3 und dem PS4 (Pre Series Aircraft 4), der momentan montiert wird. Beide Helikopter zusammen werden für die Zertifizierung eingesetzt.

***Wo finden die kommenden Testflüge statt? In Mollis?***

Sie finden nicht in Mollis statt, ganz einfach, weil die klimatischen Bedingungen es nicht erlauben, hier in ausreichendem Masse zu fliegen. Das Wetter muss vorhersehbar sein. Wir gehen nach Sizilien, wohin wir unsere Flight Test-Aktivitäten verlegen werden. Diese werden wir während eines Jahres betreiben. An Ort und Stelle werden wir sämtliche Entwicklungsflüge absolvieren, wie auch die folgenden Zertifizierungsflüge.

***Wie lange werden die Prototypen in der Luft sein?***

Im Durchschnitt acht bis zehn Stunden pro Woche.

***Von der Planung über die Konstruktion bis zur Zertifizierung eines Helikopters dauert es sehr lange. Was sind die Gründe hierfür?***

Unser Projekt startete 2009, den Zertifizierungsantrag stellten wir 2014. Gerade mit einer kleinen Organisation wie der unsrigen dauert es Jahre, bis die geforderten Dokumente vorliegen. Wir produzieren tonnenweise Papier. Jede Schraube, jede Niete muss berechnet, nachgewiesen und dokumentiert werden. Zuerst finden die Berechnungstests statt, dann der Flugtest, wobei dieser den kleinsten Teil darstellt, und dann der Material- und Dokumententest. Der Aufwand lohnt sich aber in jedem Fall: Auf diese Weise haben wir einen sicheren Helikopter. Das ist in gewisser Weise auch ein Selbstschutz.

***Ist der russische Investor Mamut zufrieden mit dem Verlauf des Projekts? Kopter ist ja auf seine finanziellen Zuschüsse angewiesen.***
Wir arbeiten mit seinem britisch-schweizerischen Investmentfonds sehr gut zusammen. Und wenn wir das liefern, was wir versprechen, brauchen wir uns keine Sorgen zu machen.

*«Ein solches Produkt nur national verkaufen zu wollen, ginge nie. Wir verkaufen weltweit.»*

***Wo soll der neue Helikopter verkauft werden? Die Schweiz als Zielgebiet dürfte nicht genügen.***
Ein solches Produkt nur national verkaufen zu wollen, ginge nie. Wir verkaufen weltweit. Wir haben Kunden in Japan, Australien, Neuseeland, Kanada, den USA, Lateinamerika und Asien. Momentan zählt Kopter ungefähr 160 Engagements: 30 Festverträge, 30 Vorverträge, die mit der Zertifizierung automatisch zu Festverträgen werden, und der Rest sind letters of intent – Absichtserklärungen, die teilweise auch mit einer Anzahlung verbunden sind.

***Wie viele Helikopter werden Sie in Mollis nach der Zertifizierung des SH09 jährlich produzieren?***
Wir wollen nach der Zertifizierung liefern, weshalb mit der Produktion einzelner Teile noch vor Jahresende begonnen werden muss. Die Produktionsaufstellung ist im Gang. Unsere Produktionshallen befinden sich in Mollis und in Näfels. Unter anderem sind dort die Vorfertigung, die Produktion von Komponenten wie die Konstruktion des Hauptgetriebes oder des Heckrotorgetriebes, der Rotorköpfe und -blätter angesiedelt.

***Wie viele Helikopter sollen jährlich produziert werden?***
Wir fangen klein an, um eine sichere Markteinführung zu haben, und werden dann progressiv auf über 100 Stück hochfahren. Wir werden aus dem Glarnerland den europäischen Bedarf abdecken. Komponenten, die wir für den amerikanischen und asiatischen Markt herstellen, werden von hier aus an die entsprechenden Fertigungsstätten versandt.

***Gewinne sollen erst 2022 erwirtschaftet werden. Wieso dauert es so lange?***
Lange sagen Sie? In der Luftfahrt ist die Eintrittsschwelle riesig. Darum tun sich potenzielle Investoren so schwer, Geld in neue Projekte zu investieren. Während zehn bis zwölf Jahren wird viel Geld investiert, ohne dass etwas zurückkommt. Das Risiko ist gross. Unser Vorteil ist, dass wir den Weg schon zu 90 Prozent hinter uns haben. Ein Cash-Breakeven Anfang 2022 wäre eine hervorragende Leistung.

***Und diese Zielvorgabe ist realistisch?***
Die ist realistisch. Und zwar deshalb, weil die Kunden Anzahlungen leisten und sich unser Orderbuch immer mehr vergrössert.

***Wie viele Leute werden in Mollis und Näfels beschäftigt sein?***
Heute arbeiten 270 Personen aus 19 Nationen für Kopter – 200 in Wetzikon, 70 in Mollis und Näfels. 170 Ingenieure sind es allein in Wetzikon. Im Glarnerland werden es Mechaniker und Produktionsingenieure sein.

***Ist es nicht schwierig, genügend qualifiziertes Personal zu finden?***
Das ist in der ganzen Schweizer Luftfahrtindustrie ein fundamentales Problem. Es gibt im Gegensatz zu Frankreich und Deutschland keine Ausbildungsprogramme. In der Schweiz muss in diesem Bereich unbedingt der Hebel angesetzt werden. Zum Glück ist die Schweiz attraktiv. Wir finden das Personal auch so.

***Müssen Sie Personal abwerben? Beispielsweise bei SR Technics?***
Nein, das machen wir nicht. Wir nehmen uns nicht gegenseitig die Fachkräfte weg.

***Sind Sie schon als Passagier mit einer der Maschinen geflogen?***
Bisher durfte ich noch nicht mit. Aber ich freue mich auf den Flug mit dem PS4. cp

**Interview: Patrick Huber**

Fotos: Rino Zigerlig

## Auf ein Wort

***Wo waren Sie zuletzt in den Ferien?***
In meinem Ferienhaus in den Bergen.

***Welches ist Ihre Lieblingsdestination?***
Mein Ferienhaus, 300 Meter von der Schweizer Grenze entfernt in der Nähe von Morgins (Frankreich).

***Wo wollten Sie schon immer mal hin?***
Burma.

***Welcher Persönlichkeit möchten Sie gerne mal den neuen Helikopter zeigen?***
Elon Musk.

***Ihr Lebensmotto?***
Positiv voran.

***Sind Sie in den sozialen Netzwerken tätig?***
Ist nicht so mein Hobby. Dafür habe ich keine Zeit. *(lacht)*

# Flight International

**Under fire**
Israel reviewing air force plans after F-16 shot down during Syrian border confrontation

**Climb rate**
Bombardier ups ambitions, with production of 40 CSeries jets on approach this year

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ROTORCRAFT

## A star is born

Why Swiss upstart Kopter will turn heads at Heli-Expo

MANUFACTURING

# The nimble alternative

The SH09 is a light-single built on a light industrial footprint, and now a revamped and renamed Kopter is nearly ready to take it to market

**DOMINIC PERRY** LONDON

Kopter

The Honeywell HTS900-powered SH09 is still on schedule for service entry during 2019

For Switzerland's only helicopter manufacturer, the past 14 months have been a period of radical change: its founder and former chief executive has departed, to be replaced by a swathe of new management, much arriving from elsewhere in the rotorcraft industry; brand-new engineering and production facilities have opened; and the company has even rebranded.

Founded as the cumbersome Marenco Swisshelicopter by Martin Stucki, the business grew out of the engineering entrepreneur's vision to develop a helicopter that would shake up the light-single market. While the rotorcraft that emerged – the equally long-winded SKYe SH09 – has a number of innovative features and promising performance levels, the business struggled to make the transition from a labour of love to a professional helicopter manufacturer capable of dealing with the realities of the market.

Against that backdrop, it was perhaps little surprise that Stucki departed suddenly in late 2016: Marenco Swisshelicopter announced that he had "retired from his functions" with effect from 5 December, while providing little detail on the split.

The manufacturer replaced its founding father with Andreas Löwenstein. A former Eurocopter executive, he was the latest in a line of executives from the European giant to wind up at the Swiss firm; of the eight members of the senior leadership team, six are ex-Eurocopter employees.

## CULTURAL CHANGE

But as the business had been founded almost as a hobby by Stucki, the thread of his influence was woven deeply into the company's fabric. Take the name, for example: Marenco is a contraction of Martin Engineering and Consulting and is also the name of Stucki's main engineering business. In addition, the helicopter operation inhabited a corner of Marenco's offices in Pfäffikon, near Zurich – in a building that had been in Stucki's family for generations.

Wrestling with these challenges has occupied the company for the past several months, although the actual impact on the development of the helicopter is unclear. As an interim step to distance itself from Stucki, Marenco Swisshelicopter became MSH. In addition, December 2017 saw the opening of a new engineering facility in Wetzikon, about 5km (3 miles) from its former headquarters. That location also features the initial flight-test prototype of the SH09 in the middle of an open-plan office. "We will keep it there," says Löwenstein. "When people arrive in the morning they know who they are working for."

But the last remaining step was to address the brand and, on 1 February, Kopter was born. Löwenstein says it "is a name that is strong, modern and instantly recognisable" and is indicative of the business's wider transformation. "We are changing from an engineering company to a fully fledged helicopter manufacturer," he says. "We are a different company with a different business model. We have changed a lot of things over the last year."

In parallel with the rebranding, Kopter has inaugurated a new 4,200m² (45,200ft²) production line, alongside a training and test facility, in Mollis, 33km to the southeast of Wetzikon. That site is a stone's throw from another plant in nearby Näfels which produces major parts such as rotor blades and other dynamic components.

Löwenstein says the new final assembly facility is a vital step. "It means that we now have a setup where we are ready to manufacture."

Employment in Kopter has also risen: 112 members of staff were added in 2017, taking the total to 260. More will arrive this year, promises Löwenstein. An expanding workforce will in part be driven by the 2.5t SH09 (the SKYe part has been dropped) entering full-scale production.

Although European Aviation Safety Agency approval had previously been promised for 2018, the slow pace of test flights so far means that date is likely to slip into next year. "We intend to finish the [flight-test] programme before the end of the year," says Löwenstein. "We expect to have certification in hand at the latest by the first quarter of 2019." However, service entry will take place on schedule in that year, he stresses.

Regulatory approval will be obtained with two helicopters: test article P3, which was rolled out last June, and pre-serial aircraft PS4, now in the early stages of production.

PS4 will fly at "the end of the summer", says Löwenstein, before it and its sister test aircraft transfer to Pozzallo, Sicily, where they will remain for about 12 months to complete their certification flights. Previously, flight tests have been conducted from its site in Mollis where the fickle Swiss weather has limited sorties.

To date, the Honeywell HTS900-powered SH09 has accumulated 70 flight hours, plus "several hundred hours on the ground" as well as more than 1,000h of tests on its dynamic components.

Of course, further tweaks to the design are still in the works, says Löwenstein, although the SH09 handles and performs "to our expectations". He adds: "If there were no design improvements we would already be certificated. Look at every development pro- »



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» gramme: the more you fly, the more you find that you can improve."

Some enhancements will appear between aircraft PT2 and PT3, and eventually on the production-conforming aircraft. "A fully fledged manufacturer equally has to think about production, and some of the things that engineers conceive are not always produceable," says Löwenstein. Those changes – to the ease of maintainability, for instance – will be introduced on aircraft PS4 "and then we will be mature", he says.

### COMMERCIAL REALITY

Kopter has taken in 27 firm orders for the $3.3 million SH09; another 19 are conditional on obtaining certification and "more than 120" are the subject of letters of intent.

Production in 2019 will be a "single-digit figure", says Löwenstein, rising to "around 20" in 2020, "then we will gear up to what we can do given the market situation".

Kopter occupies a strange position in the industry: a Swiss start-up that is trying to take on products from some of the biggest names in the business. However, Löwenstein is not too concerned about what its billion-dollar rivals think. "For them we are a kind of funny figure. I think the best measure is not our competitors but the commercial performance and the perception of the market.

"On the customer side people are starting to consider us as a real alternative," he says. Customers are drawn from all mission segments and geographies, he notes.

To date, the programme has been funded by Russian billionaire Alexander Mamut, but in October 2017 Kopter launched a new call for investment. That process is ongoing, says Löwenstein, with a positive response so far.

Kopter will arrive at the Heli-Expo show a company radically changed, but Löwenstein argues that the change was anything but a gamble. "There are constraints within the aeronautical industry where hobby working is not possible. But you do not need 20,000 people for this," he argues, with a nod to his former employer. "People can assume responsibilities and take decisions quickly – this is the fun of a smaller company like ours." ■

Kopter

Kopter has 27 firm orders for the model

PROGRAMMES

# Jet Ranger momentum

Its 525 test fleet is flying again while 505 production ramp-up and sales are gaining pace; Bell Helicopter is in a 'good place' after a tough year

**STEPHEN TRIMBLE** MONTREAL

Only a year ago, the mood at Bell Helicopter's civil business was grim. The company had entered the HAI Heli-Expo a month after reporting a six-year low for civil helicopter deliveries in 2016, against the backdrop of a broader industry downturn that seemed to have no bottom. Moreover, the flagship 525 Relentless test fleet remained grounded months after a fatal crash in July 2016 raised concerns about the super-medium type's fly-by-wire control system. Finally, the 505 JetRanger X had still not passed the first delivery milestone after falling more than a year behind schedule.

As gloomy as the atmosphere around Bell seemed a year ago, a cautiously optimistic glow has brightened the scene at head office in Forth Worth, Texas this year. Parent company Textron lightened the mood in late January by reporting a year-on-year increase in deliveries for Bell's civil business: the first since 2013. The 525 Relentless test fleet returned to flight last July. The US National Transportation Safety Board released its accident report on 6 January, and Bell had already made the software and design changes to fix the deficiencies it identified.

### LOOKING UP

Progress on the JetRanger X tracks roughly with the company's upturn in fortunes. Last November, Reignwood ordered 50 more 505s, raising the Chinese tourism operator's total order to 110 and filling Bell's empty production slots for two more years. Hundreds of letters of intent are also on hand.

But the 505's progress on the production front is mixed. After finally delivering the first 505 to a customer last March, Bell had delivered a total of 27 by the end of 2017. In some ways, it was a return to form for Bell, which had ceded the short-light-single market to Robinson since the demise of the 206B3 JetRanger assembly line in 2010.

But the delivery total in 2017 fell short of chief executive Mitch Snyder's prediction in late 2016, when he told journalists the company would deliver 50 505s in 2017 and ramp up to 150 shipments this year.

> "We are at a good place right now in terms of capacity and what we're able to produce"
>
> Cynthia Garneau
> President, Bell Helicopter Textron Canada

Cynthia Garneau, president of Bell Helicopter Textron Canada, says: "We've experienced some delays with certification. That delays industrialisation and ramp-up. We've gone through this, but it's all behind us.

"We're now at the place where we're meeting essentially our commitments to our customers in terms of delivering aircraft," she adds.

The certification delays mean Bell is still deep in the industrialisation phase of the production ramp-up. In Bell's terminology, the industrialisation phase means the assembly tasks are still not completely standardised, so a larger-than-normal percentage of assembly tasks are out of sequence.

The aluminium and composite structures for the 505 arrive in Mirabel, Canada, from an Aernnova factory in Mexico. Two major ele-



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# RH

## Kopter flies

Swiss OEM's global vision

**PLATFORM PUSH**
Leasing lessons

**ON TRACK**
Communication systems

**GREEN BUSINESS**
Offshore wind farms

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The third prototype (P3) and pre-series aircraft PS4 will jointly serve to obtain EASA and FAA certification before deliveries begin in 2019. (All photos: Rino Zigerlig)

# Kop a load of this

With determination to break into an industry beset with uncertainty, the rebranded Kopter is thrusting its premier platform to the forefront of the civil helicopter market.

**By Alice Budge**

The Swiss flying pocket knife is how Kopter, formerly Marenco Swisshelicopter, wants its inaugural aircraft type to be perceived by customers around the world. The decade-old business behind the design, development and production of the light, single-engine SKYe SH09 recently celebrated its maturation into an OEM.

Andreas Loewenstein, Kopter's CEO, has bold aspirations for the future: 'Our ambition is very simple. We want to be among the three leading helicopter manufacturers in the world within the next ten years... We want to be known in the world as the Swiss flying pocket knife. This is the symbol for what people will think about us in the future.' Speaking at the launch of the company's rebrand in Mollis, Switzerland, on 1 February, he added: 'We were an engineering company and we are becoming, I would say today, a fully fledged helicopter manufacturer.'

## Something new

The SH09 represents one of the few new platforms developed in the light helicopter segment for decades, something Philippe Harace, chairman of the board at Kopter, believes makes this the optimal time to launch a new model into the market.

'Customers around the world are pretty frustrated by the level of satisfaction they get from the products that are delivered to them... There has been no real news over the last several decades in this segment,' he explained. 'You can easily understand the time has come to have a newcomer enter.'

The company, which boasts a number of executives with vast experience from previous careers at leading OEMs such as Airbus and Leonardo, is keen to demonstrate to the industry at large that it is a serious contender. 'We now have tried to mark in front of everybody that we are arriving as a producer, as a services company, and we are there [now],' Loewenstein told *Shephard*.

Reassuring existing and future customers that Kopter is capable of gaining a significant foothold in the industry was a central element of the rebrand, and the company's efforts to secure significant capital investment will likely also assuage concerns still held by helicopter veterans.

Russian billionaire businessman Alexander Mamut has provided most of the funding for Kopter's operations over the past few years through his Cyprus-based investment fund, Lynwood. However, a large capital investment in the range of $150-200 million from an 'international bank' is expected to be finalised before 2019, providing the necessary funds to achieve the company's ambitious production schedule and target to break even by 2022.

Loewenstein told *Shephard* that there was no intention to publicly float the company, describing it as too young and vulnerable to a possible buy-out by a competitor. Despite large investments over the last decade, Kopter still operates on a tight budget and a small workforce in relation to its market competitors.

As a newcomer to the market, the company also faces significant barriers to entry, which its competitors – the likes of Airbus, Leonardo and Sikorsky – do not. Kopter does not have access to the economies of scale, brand recognition and purchasing power that the established, dominant market players possess.

However, Loewenstein believes this works to the company's advantage, enabling it to produce an efficient platform that is closely aligned to customer demands. 'We are a very lean company [with] no corporate overhead structure. We have multi-purpose, international teams... We are very competitive, and a key factor of that is delivering a solution that the operators require,' he said.

Despite this 'lean' business structure, over the past 12 months the Switzerland-based company has taken on 112 new employees, established its first international subsidiary in Germany and is in the process of incorporating a US operation based in Dallas, as well as building facilities for the manufacturing and assembly of the SH09.

## Global positioning

On 1 February, Kopter officially opened its purpose-built assembly plant and flight test centre in Mollis. Designed to facilitate the ramp-up in production following certification, the site will also act as the company's showroom and has the capacity to deliver 50 aircraft per year.

In Switzerland, the Nafels manufacturing and pre-assembly centre is currently the home of the soon-to-be completed third prototype (P3), and the dynamic components test facility is in Ennetmoos. The engineering assistance and airworthiness office is in Munich, Germany.

'We already have an international subsidiary... Germany is our engineering support centre, our certification assistance centre, and in the future [it is] where we will develop mission equipment and bring STCs onto our helicopters to allow our helicopter to fulfil all the missions it has to do,' Loewenstein explained.

'Then there is the US. We are today creating our first subsidiary on a different continent. We already have a vibrant sales team and market development team there, which will help us get a great foothold in this big market.'

In addition, he emphasised that future subsidiaries are likely to be formed in Asia and Australia to provide these regions with final assembly facilities and support services, while maintaining a Swiss industrial core. 'The company will be an international company. When you are in the helicopter industry you cannot function otherwise. We will be an international company with Swiss roots,' Loewenstein confirmed.

This international ambition is already evidenced by the range of launch customers, pre-contract orders and letters of intent.

'The spread is worldwide. We have Asian customers, North American customers, Latin American customers and a lot of European ones. The spread of customers represents the spread of helicopter fleets across the world. Roughly 45% of helicopters operate in the US, and around 45% or our customers are in the US.'

'We have today quite a number of firm and fixed orders for 27 aircraft. Then we have 19 pre-contracts, which are contracts which will automatically enter into force once we have achieved certification. Which means all in all we can consider today that we have 46 firm commitments,' he told *Shephard*. 'These commitments are spread amongst quite a number of customers. The biggest one is taking a fleet of 12 helicopters.'

EASA certification is anticipated for Q1 2019, with FAA approval to follow within six to eight months. If this schedule is met, deliveries of the initial SH09 platforms will begin in the second half of next year, with up to ten units delivered within the first year, and the first two to three years of production already sold out.

In the short term, the next steps will involve intense test flying of P3, which will be carried out in Sicily, to maximise flying hours and ensure that the certification and delivery timeline is achieved.

## Positive outlook

Entering the market with a new aircraft is seen by many as an ambitious feat during a difficult period for the helicopter industry, with oil and gas woes lingering. The SH09 faces additional hurdles in the form of competition for orders from Bell's 505 Jet Ranger X, which has now begun deliveries.

However, Loewenstein told *Shephard* that he is optimistic that the industry is returning to growth, and that it is the perfect time to launch a new model as operators begin to revitalise their ageing fleets.

'The industry is cyclical, and we are now in front of the upside... Existing products were developed in the 1970s and 1980s. The SH09 is a significant leap in terms of safety and equipment. It unites all the elements of today which are usually only available on twin-engine platforms,' he said. ▶

### SKYe SH09

**Speed:** 140kt

**Range:** 800km

**Price:** $3.3 million

**Capacity:** 7 passengers

**Sling-load capacity:** 1,500kg

**Operations:** Tourism, SAR, EMS, VIP

**Certification expected:** EASA Q1 2019, FAA Q3 2019

**Launch customers:** Air Zermatt, Alpinlift Helikopter, Tronrud Engineering

**HAI Heli-Expo 2018:** P2 configured for medical ops on display and announcement of official training partners

'The market was down for the oil and gas segment, not for the segment we are targeting, and we are the only ones to come with a new product. There is a huge replacement market as operators start replacing their fleets with ours once they see how it flies. I predict we will have a huge market share.'

While 2016 was perceived by many civil helicopter OEMs and operators to be the annus horribilis, strengthening demand signals throughout 2017 have shifted the outlook for 2018 towards one of recovery.

Despite these indicators, concerns remain that existing spare capacity across the rotorcraft industry could dampen orders for new models, at least in the short term.

'The overhang really depends on the segment. In the twin-engine segment there is overcapacity. However, the market we are targeting is responding to a different situation... to totally different challenges. We aim to build within the market by standing on multiple feet, not only on oil and gas,' Loewenstein told *Shephard*.

Designed with a bearing-free rotor system with five composite blades, powered by Honeywell's HTS 900 engine with new-generation, dual-channel FADEC and capable of performing in hot and high environments, the aircraft is expected to be adopted for use in EMS, SAR or VIP and tourist operations.

Flexibility is at the forefront of the SH09's design, with a modular cabin that has a flat floor, single-volume, high-ceiling concept and multiple seating arrangements, to enable a range of different configurations to suit specific operational requirements.

'It's positioned in the way that it can equally tackle the light twin segment. What I mean by this is in many cases you do not need a twin helicopter to deliver the mission. What you need is a cabin and performance which allows you to do the mission,' Loewenstein explained.

The carbon-fibre airframe's rear-loading capability makes it suitable for cargo and medical stretchers as well as utility and emergency evacuation roles.

## Developing capabilities

A full mock-up of P2 configured for medical operations will be on display at HAI Heli-Expo 2018. The model, developed with Metro Aviation, will provide the market with a good idea of what the series aircraft will look like.

Its capacity to carry up to seven passengers plus the pilot, its sling-load capacity of 1,500kg and range of 800km with a cruise speed of 140kt places the single-engine platform at the top of the 2.5t class.

'At a cost of $3.3 million, it offers more payload, passengers, speed, range and safety features than others in its class,' Loewenstein claimed. 'This aircraft is totally suitable to the higher end of the light single segment and the lower end of the light twin segment. We are basically tackling a market segment where you have some 100 machines per year to conquer.

'It has a super cabin, the cabin of a twin-engine platform. We also have power – it can do high-altitude transport missions. With 10m² of glass, it is also perfect for tourism and scenic flying. It is also perfect for EMS as it has space for two medical personnel plus the pilot,' he continued.

While Kopter is yet to confirm its supply chain, Loewenstein told *Shephard* that additional features such as connectivity solutions and mission equipment are currently being developed. 'You cannot be delivering helicopters in the 21st century that are connected like they were in the past,' he concluded. ■

**CEO Andreas Loewenstein unveiled the company's new name, Kopter, to guests and media at the Mollis facility in Switzerland on 1 February 2018.**

Kopter's under-development SH09 mates a dual-Fadec-controlled Honeywell HTS900 turboshaft of 1,020 shp to an all-carbon fiber airframe incorporating a shrouded tailrotor. Accommodations are provided for up to seven passengers while the cockpit includes an all-glass instrument panel. Its internal-only maximum takeoff weight will be 5,842 lbs.

# With its new name, Kopter transitions to manufacturing

by Guillaume Lecompte-Boinet

Since Marenco Swisshelicopter has rebranded as Kopter, the company is now turning to certification and serial production of its SH09 light single-engine helicopter, which features a large rear-fuselage entry door. Kopter's Heli-Expo exhibit (Booth N4615) features prototype P2 as well as the SH09 mockup.

"We have to transform Kopter from a very talented engineering company to a real helicopter manufacturer, able to produce in series and support our customers," said Andreas Löwenstein, CEO of Kopter, when he unveiled the new brand on February 1. To do so, Kopter will close a funding round of $150 to $200 million with banks and investment funds later in 2018. The financial backer of Kopter, Russia's Alexander Mamut, who has already invested $270 million in the program, will remain the principal shareholder through Cyprus-based company Lynwood.

Besides its new name, the Swiss company has inaugurated a new corporate/engineering facility in Wetzikon, 25 km from Zurich, and new production facilities in Mollis, along with those in Näfels. The factories will house up to 500 employees by 2021 and have a total surface area of 18,000 sq m (226,000 sq ft). Mollis is dedicated to final assembly and test flight, while preassembly of key components, such as the gearbox, rotor blades, and the all-composite airframe, takes place in Näfels.

Kopter also has facilities in Munich, Germany, for airworthiness and engine support, and in Ennetmoos, Switzerland, for dynamic component tests, such as the main rotor system. The company has opened a U.S. subsidiary in Dallas for market development. "We also plan to have a final assembly line in the U.S. and in Asia. Their precise locations haven't yet been decided," said Löwenstein.

The Mollis facility is organized with lean manufacturing methods. The SH09 will be assembled in a flow line of six stations. "We want to achieve a time cycle of 20 weeks to assemble and deliver a machine," said Jan Nowacki, executive v-p of operations.

Planned ramp-up is to deliver five to 10 SH09s in 2019, 20 in 2020, more than 30 in 2021, and reaching the full Mollis capacity of 50 machines per year in 2022. Those figures don't take into account final assembly lines in the U.S. and Asia.

Kopter has logged 27 SH09 firm orders, 19 on precontract with payment (which will be converted into firm orders as soon as EASA certification occurs), and 120 letters of intent, Löwenstein said. "We have sold out the first two to three years of production," he added.

Kopter is still finalizing some primary suppliers for the helicopter. It chose Switzerland-based Connova to fabricate the main components of the all-composite airframe and TenCate to provide the TC-275 pre-preg carbon composite material used for composite manufacturing. The manufacturer will likely announce the avionics supplier shortly, although Sagem provided avionics for the first prototypes.

Kopter still aims to obtain EASA certification within 12 to 14 months and FAA certification by September 2019. Entry into service is planned for fall 2019. "It's been a long and difficult road," admitted Michele Riccobono, executive v-p of technology, who joined Kopter last June from Leonardo Helicopters. He acknowledged issues surrounding high-vibrations and loads in the rotor system of P2, the second prototype that has flown around 70 hours and is being showcased at Heli-Expo. "We have now fixed this problem with new blades," he said.

A third prototype, P3, is expected to fly shortly. This rotorcraft will fly around 250 flight hours through next September and will be used to open up the flight envelope, including maximum speed and altitude, controllability, and aerodynamic tests. Kopter engineers have replaced the flex cables fitted on P2 for control of the main rotor blades with rods on P3 to improve rotor system control. The first pre-series SH09, PS4, will fly in September.

"We have postponed PS4 a little bit to implement all the modifications and adjustments coming from the P3 flight test program," said Riccobono. A total of around 110 flight hours are planned for PS4. Based on his experience at Leonardo, Riccobono plans to send P3 to Sicilia, in Pozzalo, to take advantage of sunny weather —and no air-traffic restrictions—and accelerate the flight-test program. Flight-test teams plan to fly day and night there.

Weight remains a challenge despite the advantages of carbon-composite construction. P3 missed its goal of an empty weight of 1,300 kg, with a weight of 1,530 kg. For PS4, which is still loaded with flight-test instrumentation, Kopter is targeting a reduced empty weight around 1,450 kg. "The target empty weight for the SH09 serial design remains at 1,300 kg, [which] gives a payload of 1,350 kg, slightly higher than the empty weight," said Riccobono.

Kopter is also working on EASA certification of the SH09's Honeywell HTS900 turboshaft engine.

Löwenstein has reaffirmed the ambition to make Kopter "one of the world's leading manufacturers of light helicopters within 10 years." Kopter is hoping to capture 20 to 25 percent of the civil world market.

One area of focus is the U.S. EMS market, where operators can fly single-engine rotorcraft. In Europe, operators must fly twin-engine helicopters. In the EMS segment, the SH09 will face competition from the Airbus Helicopters H125/130 and the Bell 407. "SH09's large cabin and easy back-door access are well-fitted compared to competitors," noted Christian Gras, Kopter executive v-p for customers.

Kopter also is targeting the sightseeing market with a large glass-enclosed cabin (at 10 sq m), high cruise speed (140 knots), and capacity for up to eight passengers. Other potential markets include police and security, utility, VIP transportation, and coast guards. ■

## Airbus Selects Safran's Aneto for Racer

Airbus Helicopters (Booth N1915) has selected Safran's Aneto engine to power its Rapid and Cost-Efficient Rotorcraft (Racer) high-speed compound helicopter demonstrator. The Racer will be powered by two 2,500-shp Aneto-1X engines, a family of engines unveiled by Safran (Booth C4743) in October.

The Racer is funded by the European Commission's H2020 research program, as part of the Clean Sky 2 initiative. The 2,500-hp Aneto-1X engine is 25 percent more powerful than existing engines with the same footprint, according to Safran, helping to increase capabilities.

The Racer will be the first helicopter to have the Safran Power Pack Eco Mode configuration, which incorporates hybrid propulsion technologies allowing better energy management. Developed in partnership with Safran Electrical & Power and the result of a study financed by France's General Directorate of Civil Aviation (GDAC), the Power Pack Eco Mode configuration allows the pilot to put one of the two engines on standby during cruise flight, reducing fuel consumption by around 15 percent.

When necessary—for acceleration, landing or emergency maneuvers—the standby engine is quickly and automatically reactivated to its maximum power, thanks to a new type of electric motor designed by Safran Electrical & Power.

"Aneto will help us achieve the ambitious environmental and performance goals set out in this European research program, thanks in particular to Eco Mode," said Tomasz Krysinski, Airbus Helicopters' research and innovation director. **M.H.**

# ROTORCRAFT PRO

## EN ESPAÑOL

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## ACTUALIZACIÓN PARA LOS FABRICANTES DE HELICÓPTEROS 2018:

### ENFRENTAR DESAFÍOS Y PREPARARSE PARA CIELOS MÁS BRILLANTES

## AEROMETALS LO HACE TODO

# KOPTER IGNORA LA RECESIÓN

¿Recesión? ¿Qué recesión? Para Kopter, su atención no está en absoluto en la economía actual, sino en llevar al mercado el helicóptero SKYe SH09 multipropósito, monomotor, ligero y de compuesto de carbono de la compañía.

En desarrollo desde 2009, el SKYe SH09 de compuesto de carbono puede transportar de cinco a ocho personas, tiene puertas traseras plegables y una cabina grande con configuración flexible. En la actualidad, Kopter tiene dos prototipos en funcionamiento (P2 y P3; el P1 ha sido retirado) en modo de prueba de vuelo y un tercer helicóptero (PS4) que está siendo construido para cumplir con las pruebas de Certificación Tipo EASA en 2018. El objetivo de la compañía es comenzar la producción a mediados de 2018 y comenzar a entregar los SH09 terminados en 2019.

"Cuando se trata de nuestro helicóptero, vemos que el mercado de ventas se está volviendo más robusto", dijo el CEO de Kopter, Andreas Löwenstein. "Esto se debe a que el diseño de chapa limpia del SH09 ofrece a los clientes una cabina espaciosa de aeronave de tipo bimotor en una sola plataforma de helicóptero, con mucha visibilidad exterior y espacio interior". Añadió que el SH-09 presenta sistemas hidráulicos y eléctricos completamente redundantes, lo que hace que se parezca más a un helicóptero bimotor que a un monomotor en lo que refiere a normas de alta seguridad.

En la actualidad, Kopter tiene cerca de 30 pedidos firmes o precontratos de SH-09 para 10 clientes, con memorandos de entendimiento ("yo los llamo preacuerdos", dijo Löwenstein) para 118 helicópteros adicionales. "Diría que esto nos da un punto de partida bastante bueno para comenzar la producción en 2018", dijo Löwenstein.

¿En cuanto a los clientes potenciales para el SH-09? "Nos estamos enfocando en emergencias médicas, orden público y en el turismo, entre otros sectores", respondió Löwenstein. "La espaciosa distribución del SH-09 y su cabina fácilmente reconfigurable, además de su seguridad y sus bajos costos operativos, lo convierten en una alternativa económica incluso para los bimotores tradicionales".

# HAI Convention News

DAY 2
February 28, 2018

AIN PUBLICATIONS
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KASHEA KLOSS

Heli-Expo 2018's opening day saw manufacturers announce sales of upwards of 100 new helicopters worth hundreds of millions of dollars. Meanwhile, HAI said some 860,000 sq ft of exhibit space has been sold at this year's Heli-Expo, rivaling 2017's record-breaking year. It all means the 2018 event is on-pace to be one of the best ever.


**Leonardo, Kopter Sales Top $150 million**
Both firms notch new orders › page 3

**Leonardo Bullish on AW169**
Wide range of options may help › page 10

**Asia-Pacific Growth**
EMS ops lead the market › page 16

**Kopter CEO's Plans**
Andreas Löwenstein's ROI › page 25

**Flying Neighborly**
Hawaii operators take action › page 26

**Bell's 505 Jet Ranger X**
The **AIN** Pilot Report › page 28


# Airbus snags Metro mega order

by Mark Huber

Airbus Helicopters and Metro Aviation announced an estimated $125 million fleet order for 25 EC145e medium-twins on Tuesday at Heli-Expo 2018. Deliveries have already begun and are scheduled to continue over the next four years.

The EC145e is a lower-cost variant of the out-of-production EC145C2, a model similar to the U.S. Army's UH-72A Lakota that is still in production.

It will be built in the same Columbus, Mississippi plant where the Lakota is manufactured, helping to enable the continued operation of that facility, according to Airbus (Booth N1915). It anticipates maintaining a production rate of two UH-72As/EC145es per month in Columbus.

Metro (Booth N2207) was the first customer for the lighter-weight, lower-cost EC145e when it was launched by Airbus Helicopters in 2015, and it already flies six of them in air medical roles in various U.S. locations, including West Michigan Air Care, Children's Hospital Atlanta, Gundersen Health Systems (Wisconsin), and Vidant Health (North Carolina).

It currently operates its EC145es as VFR-only, enabling a useful load improvement of 330 pounds over standard IFR avionics, compared to the EC145C2. However, Metro is developing an STC for a lightweight IFR package that it will install into its EC145es at its Shreveport, Louisiana completions facility. Working with Genesys Aerosystems, Metro has developed and received FAA STCs for a VFR electronic flight instrument system (EFIS) and an autopilot and stability augmentation system for the EC145e. IFR certification is expected this year.

Airbus' standard VFR avionics package for the EC145e features a glass cockpit with the Garmin G500H and GTN 650 GPS and communication system. It has an mtow weight of 7,903 pounds. The weight savings from Metro's VFR-only avionics package allow an extra 70 gallons of fuel or 200 to 250 pounds of payload, which translate into another hour of endurance or an additional patient, respectively, a Metro spokesman told **AIN**.

Metro plans to operate some of the new EC145es in its own medevac fleet, but said it would also remarket others in medevac, utility, and VIP configurations.

"The versatility and price point made it an attractive addition to a large number of rotary-wing fleets, and we have put seven in service since committing to our first purchase in 2015," said Metro Aviation president Mike Stanberry. "The EC145e has proven to be a workhorse across various mission profiles, and we are excited about putting these new aircraft into service within our family of customers."

The operator said it has found significant interest for the lower-cost EC145e from a diverse group of customers, including air medical, law enforcement, utility, and other missions. ■

BARRY AMBROSE

Richard Simonsen of Norway's Helitrans addresses the crowd at Kopter's booth Tuesday on the Heli-Expo 2018 exhibit floor. Helitrans accounts for more than half of the 23 firm orders for Kopter's forthcoming SH09.

# Kopter wins $119M in firm SH09 orders

by Alexa Paprosky

Kopter amassed firm orders for 23 of its all-composite SH09 light single helicopters, and options for 11 more, yesterday at Heli-Expo 2018. At list prices, the deals with launch customers Paradise Helicopters, Helitrans of Norway, and Elling Halvorson, as well as Safomar Aviation, are worth $119 million, if all options are exercised. A mockup of the Helitrans SH09 is also on display at Kopter's booth (N4615).

Helitrans, one of the largest helicopter operators in Norway, signed a firm order for 12 SH09s, with options for six more. "The unobstructed cabin and modern ergonomics of the SH09 will profit both our crew and most importantly our clients, while enabling us to aim for new markets and helicopter activities. We are looking forward to benefitting from the high performance of the helicopter but also to benefit from its lower cost of operations brought by modern technology and the right philosophy," said Helitrans manager Richard Simonsen.

The order from Helitrans "allows us to solidly increase our firm order book so as to ensure the production gear-up for the first two to three years," according to Kopter CEO Andreas Löewenstein.

Meanwhile, Hawaii's Paradise Helicopters signed for four SH09s. At the order ceremony, Paradise Helicopters CEO Calvin Dorn said the capabilities of the SH09 and its Honeywell HTS900 engine offer "an exciting and efficient means to expand our unique air tour and charter packages." Löewenstein expressed a sense of satisfaction with Paradise's order, saying, "The fact that Paradise Helicopters in Hawaii has selected to operate our helicopter is an indication of the trust important operators have in Kopter and of the wide range of application the helicopter is capable of handling."

Elling Halvorson, of the Halvorson Company, sealed a deal for five SH09s and options for a further five. The company's SH09s would initially be used for its Rainier Heli Lift International operation. "About eight years ago, Marenco [now Kopter] showed up on the Heli-Expo floor, and I told my family that it was an aircraft we needed to take a strong look at," said Halvorson.

Late yesterday, Kopter announced that South Africa's Safomar Aviation placed an order for two SH09s and is discussing the possibility of representing Kopter for sales and support in the country. ■

# Leonardo lands $147M in new sales

by Marisa Bojiuc

Leonardo Helicopters (Booth C3225) won an order for 26 helicopters worth more than $147 million from Chinese distributor Sino-US Intercontinental Helicopter Investment yesterday at Heli-Expo 2018. The deal is for seven AW119Kx singles, 15 AW109 Trekker light twins, and four AW139 intermediate twins.

Through the Sino-US partnership, Leonardo has developed a strong position in the China EMS market. Leonardo has sold 110 helicopters of various types to Sino-US, with 50 of those flying in 36 provinces throughout China.

KASHEA KLOSS

Leonardo Helicopters executives and representatives from Sino-US Intercontinental Helicopter Investment pause Tuesday at Heli-Expo 2018 to toast their agreement for 26 new helicopters.

"We are very honored to be the national distributor with the best performance. Sino-US will keep working with Leonardo Helicopters closely, and we view a bright future for the Chinese helicopter industry by joining forces," said Sino-US chairman Shuping He.

Meanwhile, Leonardo also announced that the worldwide fleet of 900 AW139s has exceeded two million flight hours. "We expect from now on to double from two million and soon enough to four million. It's an important milestone for all of us," said Gian Piero Cutillo, who was appointed Leonardo's managing director four months ago.

"I don't think that there are many products that can easily achieve such kind of results," he said. "The AW139 has become our benchmark," he added. ■

# Airbus in new deals for 17 helicopters

by Mark Huber

Airbus Helicopters (Booth N1915) signed deals for at least an additional 17 helicopters late yesterday at Heli-Expo 2018. Heliflite China placed an order for seven H125 and three H130 singles, Helicopter Travel Munich (HTM) signed an agreement for four H125s, Noevir Aviation booked a single H125, and Japan's Auto Panther and Nakanihon Air Service opted for an H130 and H135, respectively.

Heliflite China, based in Xian, has also been accredited as an official Airbus Helicopters distributor in the region and began distribution operations in 2002. The helicopters in its latest order will be used for utility and emergency medical services missions throughout China.

"Given the sheer size of the market and its potential in China, we are preparing for future growth by ensuring we will have the necessary resources available to support all of our operations in the country," said Marie-Agnes Veve, the head of Airbus Helicopters in China.

According to Airbus Helicopters, the H125/H130 is the largest turbine helicopter fleet in China, making up nearly 50 percent of all light single engines in the country, with more than 125 of the helicopters currently in operation there. The company has an overall in-country market share of 40 percent, with an annual growth rate of 20 percent over the last five years. Airbus has seven local offices and a regional customer service center, and is the first Western helicopter manufacturer to set up a final assembly line (FAL) in the country.

The deal with Helicopter Travel Munich (HTM) completes that company's fleet of 25 Airbus helicopters. "We selected the H125 for its superior performance, especially in mountainous areas and hot climates" said Hans Ostler, CEO of HTM. "We are excited to put this helicopter into operation for a number of missions including passenger transport, aerial work, filming and photo shoots, and firefighting." HTM operates 25 at 6 locations, flying more than 5,000 hours a year.

Noevir Aviation's H125 light single will join its fleet of earlier-version H125s, which have been serving the company's charter needs for the past three decades. Auto Panther inked a deal for the ACH130, which features Airbus' signature "Stylence by ACH" VIP interior with a sports-car-inspired design.

With Nakanihon Air Service's new order, its fleet will grow to 20 helicopters that serve on missions spanning helicopter emergency medical services and electronic newsgathering. ■

# CEO outlines plans for Kopter

by Rick Adams

## An Interview with Kopter CEO Andreas Löwenstein

A year ago, beset by delays in development of its SH09 light-medium single-engine utility helicopter, startup company Marenco Swisshelicopter replaced founder Martin Stucki as CEO with Andreas Löwenstein, a former Eurocopter senior executive. Within a few months, he brought in almost an entirely new team of C-level leaders, largely from Airbus Helicopters and Leonardo.

The company (Booth N4615) sought to reaffirm its stability in early February, rebranding as Kopter Group while christening a new headquarters and production facilities near Zurich.

**AIN** correspondent Rick Adams spoke with Löwenstein about the changes and Kopter's prospects for breaking into a crowded market.

**AIN:** When you joined the company, what was your initial objective?

**Löwenstein:** My big challenge for 2017 was to transform in very short term this totally engineering-minded company into a helicopter manufacturer. You do not certify the aircraft; you certify a system with product support, pilot training, documentation, sustainability, [and] traceability of components. We had to bring helicopter manufacturing experience into the company—build a sales team, build a supply chain, build all the facets you need in order to produce. We now have a really experienced team who have done all their life helicopter manufacturing.

To complete the picture, last year we recruited 112 people, which is a lot for a tiny company like ours. If our business case reaches the level we expect, direct employment in the company will be close to 1,000 people.

**AIN:** What advantages do you think Kopter has as a start-up?

**Löwenstein:** We are a small team that is extremely reactive. We can make a decision within hours, not months. We can do our work for between a third and a quarter of the cost of big organizations.

**AIN:** Why does the market need a new helicopter?

**Löwenstein:** This is one of the market segments in which actually not much has happened in the last 20, 25 years. If you know what the market is basically requesting, you then have a real opportunity to get a grip on a significant part of the market. You cannot go frontally against the incumbents; you have to be a little bit more agile, betting on what exactly the market is missing today.

**AIN:** So what does the SH09 offer that's missing in its class?

**Löwenstein:** We are certified to EASA 2014 standards, which means a major leap in terms of crashworthiness. We will have dual hydraulic systems, redundant double-channel Fadec, redundant electrical systems. The whole will be digital architecture, which allows operators to better know where and how the aircraft is aging. You can basically do prevention on the aircraft, which is not possible on older models.

Due to the use of new materials, we can architect the aircraft in a different way. We have a cabin...of a much bigger aircraft. We have a very potent engine, which will give this aircraft outstanding high and hot capabilities. You will find a totally different economic model because you have more passengers onboard. You can do EMS, particularly in the U.S., with an aircraft that has a single-engine cost but can perform a twin-engine mission.

**AIN:** Switzerland is known as a challenging environment for helicopters. Has this locale enhanced development?

**Löwenstein:** We are well placed in Switzerland to know to do things pragmatically and with engineering intelligence. We have shaped our mission profile to the most demanding missions. People in Switzerland know what it means to fly in extremely adverse conditions—high flying in winter time in snow conditions, flying with winds, and flying close to the mountainside. We are describing our helicopter as a flying Swiss pocket knife.

**AIN:** The SH09 was conceived in 2002 and has managed to keep going through a severe helicopter market slump. Clearly, your investor believes in this new product.

**Löwenstein:** I think we have an outstanding investor [Russian billionaire lawyer and banker Alexander Mamut] who has been constantly financing this program since 2009. We have today spent more than $250 million on this program...When you go into aeronautical adventures you cannot expect, as an investor, to have a payback of five years. By definition, aeronautics is always a long-term investment, somewhere in the window between 10 and 15 years.

**AIN:** Your new brand name is Kopter. What was the rationale for this choice?

**Löwenstein:** The name Marenco Swisshelicopter was too complex, too long, and too burdened equally with personal histories...We are no longer a local company. We can sustain only if we are globally visible and globally understood and that people see immediately that this is a helicopter manufacturer. ■

BELL HELICOPTER

The Model 407GXi is the third spiral upgrade of the aircraft announced since 2011.

# Incremental Change Coming to Light Helicopter Market

> BELL RAMPING UP PRODUCTION OF MODEL 505 JET RANGER X

> U.S. ARMY CONTRACTS DELAY MD HELICOPTERS NEW-MODEL PLANS

**Guy Norris and Tony Osborne** Las Vegas

"The only way is up," appears to be the view of the commercial helicopter industry. After years of stagnating oil prices resulting in declining sales, there is agreement that the market appears to have bottomed out and stabilized.

But it has been a tough time, and without the revenues from the more lucrative medium- and heavy-helicopter sales, slackened by the decline in energy prices, helicopter manufacturers have been hesitant to make serious investments to modernize their light single- and twin-engine products in particular. So incremental change has been the name of the game.

Bell—which scrapped "helicopter" from its branding in the days leading up to this year's Heli-Expo—was the only company to reveal a new aircraft at the show; albeit a warmed-over version of its Model 407, the 407GXi is kitted out with a new avionics suite and an uprated engine.

Meanwhile, Airbus secured 25 orders for a niche version of its top-selling H145 twin-engine helicopter from an emergency medical services (EMS) market it says is both "sizable and untapped."

Surprisingly, the largest order tally was by Swiss newcomer Kopter Group—fresh from its rebranding from Marenco Swisshelicopter in February. It secured about 40 orders or letters of intent for its SH09 single-engine light aircraft, due to be certified in the first quarter of 2019.

Yet market demand remains strong for light single- and twin-engine helicopters, according to a study by Honeywell published on the eve of the Las Vegas show. It forecasts that the market will need about 4,000 new rotorcraft over the next five years, with the vast majority of that need for single-engine models.

Bell says it is preparing to ramp up production of its Model 505 Jet Ranger X after a first year of production that saw 43 aircraft delivered from its Mirabel, Quebec, production line. CEO Mitch Snyder will not confirm the level of conversion from letters of intent to firm orders, but the company has enjoyed significant interest in the aircraft from the Chinese market.

During Heli-Expo, Bell secured the first order for a 505 from the law enforcement market for the Sacramento Police Department.

The long-awaited introduction of the 505 has not dented the success of Robinson's R66 turbine, which grabbed much of the Model 206 Jet Ranger's market when Bell ceased its production in 2010.

Of the 305 aircraft produced by California-based Robinson Helicopter Co. in 2017, 77 were R66s versus 63 sold in 2016. Robinson is confident of slightly increased sales in 2018, with deliveries just ahead of where they were this time last year.

"People can go out and fly it [the Model 505] . . . and they're not just hearing rumors, and it's actually helped our sales," says CEO Kurt Robinson. "They don't have that fear, doubt and uncertainty . . . . That is what has been driving us crazy more than anything else."

Robinson is even pondering the installation of a diesel engine in its R44 as an alternative to the existing Lycoming IO-540 six-cylinder piston.

Schweizer RSG, the company that purchased Sikorsky's light helicopter line in January, has generated renewed interest in the aircraft. Sikorsky's unwillingness to invest in the Schweizer line after it purchased the helicopter company in 2004 had a wide impact on the supportability of the fleet over the last five years. A lack of parts and support forced a number of flight-training companies to adopt new training aircraft types, and a cottage industry of buying and selling parts blossomed.

Schweizer RSG CEO David Horton anticipates beginning parts production and distribution once the FAA has awarded production approvals, expected in early summer. Interest in new-build aircraft is also considerable, however, and the OEM is looking to be able to offer a visual flight rules (VFR) model S-300C for about $400,000 when production of the aircraft restarts in Fort Worth later this year.

MD Helicopters' hopes of bringing its new MD6XX single-engine helicopter to market in 2018 have been hindered by a lack of internal resources.

However, MD owner and CEO Lyn Tilton tells Aviation Week she is optimistic that the aircraft, a derivative of the company's MD600N but featuring a conventional tail rotor rather than a NOTAR (for "no tail rotor") anti-torque system, could be brought to the market in 2020.

Airbus will further expand its U.S. presence by building a second commercial helicopter in-country. The company will build a niche version of its H145 twin-engine light helicopter after receiving an order for 25 aircraft from specialist EMS operator and completions outfitter Metro Aviation.

Metro has identified a number of customers who want the cabin space of Airbus' H145 helicopter but have no need for the advanced avionics of that model, says Airbus Helicopters President Chris Emerson. Instead, Airbus will build the EC145e, essentially the commercial version of the UH-72 Lakota already built by Airbus Helicopters in Columbus, Mississippi, from kits supplied from Germany.

# KOPTER ANNOUNCES SH09 ORDERS

## MARENCO SWISSHELICOPTER REBRANDS

February 28, 2018 | By Mike Collins

**Marenco Swisshelicopter on Feb. 1 announced that it was rebranding its fast-growing business. The company said the name change to Kopter marks a new chapter in the company's history, as it progresses through its flight test program and transitions from an engineering company to a manufacturing company. Kopter Group was founded in 2007 to develop, build, and support a new generation of turbine helicopters. Its SH09 single-engine helicopter offers a large cabin/cargo volume, excellent hot and high performance, and modular configuration.**

Kopter, the former Marenco Swisshelicopter, unveiled a new mockup of its SH09 at HAI Heli-Expo 2018. A flying prototype was on display as well. Photo by Mike Collins.

The SH09 first flew Oct. 2, 2014, in Switzerland. With a maximum takeoff weight of 5,842 pounds, it will carry a pilot and up to seven passengers. Powered by a 1,020-shaft-horsepower Honeywell HTS 900 turbine engine, it will offer a maximum range of 430 nautical miles and cruise as fast as 140 knots.

"We're a company with an upward trajectory. Over the past few years, we have grown quickly," said Kopter CEO Andreas Löwenstein. "Our new name provides us with immediate recognition. It allows us to own a word that is synonymous with helicopter travel. As we are an unmistakably Swiss company, the use of a K—instead of a C—gives the Kopter a strong, Swiss-Germanic feel. It has a feeling of solidity and dependability—two things that are essential in our industry."

Kopter displayed the second SH09 prototype at Heli-Expo 2018 in Las Vegas. Prototype 3 is being prepared to continue the flight test program. P3 and pre-series aircraft PS04 both will be used to obtain European Aviation Safety Agency (EASA) certification, followed shortly by FAA validation. First deliveries are anticipated in 2019.

As a sign of its progress to date, Kopter Group received Design Organization Approval (DOA) from EASA on Feb. 21. The certification is a major milestone for Kopter, and makes it eligible to receive the SH09 type certificate, which is planned for early 2019.

Kopter announced a number of orders for the SH09 at Heli-Expo. Helitrans AS, one of Norway's largest helicopter operators, has placed a firm order for 12 aircraft with an option for up to six more. Helitrans AS was founded in 1990 and currently operates a fleet of 17 multipurpose helicopters based at eight locations in Norway.

The first announced U.S. deliveries will be four SH09s for Paradise Helicopters, which will use them for air tours and charters in Hawaii. Paradise is based in Waikoloa, Hawaii. "The entire team is thrilled to be a launching partner, and looks forward to the certification and fielding of this new, powerful helicopter into the air tour and charter markets in Hawaii," said Calvin Dorn, CEO of Paradise Helicopters.

Rainier Heli International Inc. also has contracted to purchase five SH09 helicopters, with options for up to five more. The company was founded by aerial tour pioneer Elling Halvorson, who also founded and serves as chairman of Papillon Group, one of the longest-running family-owned helicopter tour companies in the world.

The company will continue to focus on the U.S. market. On Feb. 16 it appointed Larry Roberts as senior vice president of U.S. business development, responsible for the sales and marketing of the SH09 in North America.

Roberts has worked in the U.S. commercial helicopter industry for the past 20 years, including for American Eurocopter Corp. (now Airbus Helicopters Inc.) and Bell. Before he entered the commercial helicopter market in 1997, Roberts served as captain of criminal investigations for the Citrus County, Florida, sheriff's department and as patrolman and watch commander for the Gainesville, Florida, police department. He was a founding member of the Gainesville Police helicopter unit. Roberts will be based in the Dallas area.

Kopter's new SH09 cabin mockup, on display at HAI Heli-Expo 2018, is fitted with a medivac interior. Air tour operators also have expressed interest in the new model. Photo by Mike Collins.

MAR 6, 2018

# Kopter Rebrands from Marenco Swisshelicopter and Progresses Towards Certification

The company formerly known as Marenco Swisshelicopter, which recently rebranded itself as simply Kopter, brought its second prototype of the light turbine SH09 helicopter to Heli-Expo in Las Vegas. During the show, the company unveiled a mockup outfitted for EMS duties featuring the livery of launch customer Helitrans, and amassed firm orders for 23 SH09's, with options for 11 more. Kopter's development program is now turning to certification and serial production of the all-composite single-engine helicopter, which features a large rear-fuselage entry door and fenestron-configured tail rotor.

Keep an eye on AINonline.com for all the latest news from aviation industry!

Music: It's Always Too Late to Start Over by Chris Zabriskie

Kopter hebt ab

# Verkaufserfolge für neuen Schweizer Helikopter

An der Helikoptermesse in Las Vegas bestand der Schweizer Hubschrauber SH09 von Kopter seine Bewährungsprobe.

Urs Bachofner
Montag, 12.03.2018, 16:31 Uhr
Aktualisiert um 23:06 Uhr

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Dieser Artikel wurde 21-mal geteilt.

Kopter: Ein Schweizer Hubschrauber für die Welt
Aus ECO vom 12.03.2018.

## Das Wichtigste in Kürze

- Vor gut zehn Jahren begann die Entwicklung des ersten Helikopters aus Schweizer Produktion. Vor zwei Jahren fanden die ersten Testflüge statt, jetzt ist Kopter in der Zertifizierungsphase.
- Bis vor kurzem hiess das Unternehmen noch Marenco Swiss Helicopters.
- Der Bestellungseingang ist, auch dank der Messe in Las Vegas, sehr gut. Aber: Kopter braucht neue Investoren.
- In 18 Monaten sollen die ersten Kunden ihre Hubschrauber in Empfang nehmen können.

Für Kopter-CEO Andreas Löwenstein waren es hektische Tage. Er musste an der Messe Ende Februar beweisen, dass sein Hubschrauber aus Schweizer Produktion auf dem harten US- Markt bestehen kann.

Die Konkurrenz ist gross, Firmen wie Airbus-Helicopter mit fast 7 Milliarden Dollar Umsatz oder Leonardo mit 10'000 Mitarbeitern sind Schwergewichte.

Da kommt der Vergleich von David gegen Goliath auf. «Das ist ganz klar so», sagt Andreas Löwenstein im «ECO»-Interview. Um mit einem Lächeln anzufügen: «Aber wer hat gewonnen?»

## Schweizer Erstkunde

Nach den drei Messetagen konnte ein sichtlich entspannter Löwenstein stolz verkünden: «Der Schweizer Helikopter gefällt ganz klar.» Dies konnte er dann auch an konkreten Verkaufszahlen festmachen: 20 feste Bestellungen und nochmals so viele Kauf-Absichtserklärungen wurden unterschrieben.

Damit stehen insgesamt bereits rund 50 feste Bestellungen und über 100 Kaufabsichten in den Auftragsbüchern. Der Helikopter soll pro Stück rund 3 Millionen Franken kosten. In rund eineinhalb Jahren soll der erste Helikopter ausgeliefert werden.

Ein Kunde ist Air Zermatt, laut Verwaltungsrat Philipp Perren war man bei Air Zermatt von Anfang an vom Konzept überzeugt. «Seine Kabine ist etwas grösser als vergleichbare Modelle. Ausserdem ist er sehr leise, und Lärm ist in Zermatt immer ein grosses Thema.»

Entscheidend für die Zusammenarbeit mit Kopter war laut Philip Perren, dass die Erfahrung von Air Zermatt in die Entwicklung miteinfliesst. «Wir hatten von Anfang an die Möglichkeit, bei diesem Projekt mit dabei zu sein. Regelmässig fand ein Austausch mit unseren Technikern, Piloten und Ärzten statt.»

## Kompetenzzentrum für Helikopter

Produziert werden soll der Hubschrauber im glarnerischen Mollis. Anfang Februar weihte Kopter eine neu erstellte Produktionshalle am dortigen Flughafen im ein.

Eine zweite Halle ist in Planung. Ausserdem sollen sich auf dem ehemaligen Militärflugplatz auch Zulieferer ansiedeln. Die Idee ist, ein eigentliches Kompetenzzentrum für Hubschrauber aufzubauen.

Dies hat Auswirkungen auf die gesamte Region. Martin Laupper, Gemeindepräsident der Region Glarus Nord, spricht gar von einem Jahrhundertprojekt: «Für eine Gemeinde ist es eine unglaubliche Chance, eine solche Industrie anzusiedeln.» Es werde die ganze Arbeitsplatzsituation verändern, nicht nur am Flughafen selber, sondern in der ganzen Region.

### Kopter sucht Investoren

Während die Verkäufe des von Kopter gut vorankommen, ist die Finanzierung fragil. Bislang wurden die Entwicklungskosten von einem Grossinvestor aus Russland getragen. Dieser möchte nun aber die Last auf mehrere Schultern verteilen. Kopter sucht deshalb neue Investoren, die 150 bis 200 Millionen Franken zur Verfügung stellen.

## Aus einer verrückten Idee ist Realität geworden

# Ein Schweizer Heli für die Welt

Das Schweizer Unternehmen Kopter hat einen Helikopter entwickelt. Nächstes Jahr soll er den Kunden geliefert werden.

# Heli-Expo 2018: Kop a load of this (video)

21st February 2018 - 01:02 GMT | by Alice Budge in Mollis

RSS

The Swiss flying pocket knife is how Kopter, formerly Marenco Swisshelicopter, wants its inaugural aircraft type to be perceived by customers around the world.

The decade-old business behind the design, development and production of the light, single-engine SKYe SH09 recently celebrated its maturation into an OEM. The company's CEO Andreas Loewenstein has bold aspirations for the future.

'Our ambition is very simple. We want to be among the three leading helicopter manufacturers in the world within the next ten years… We want to be known in the world as the Swiss flying pocket knife. This is the symbol for what people will think about us in the future.,' he stated.

Speaking at the launch of the company's rebrand in Mollis, Switzerland, on 1 February, he added: 'We were an engineering company and we are becoming, I would say today, a fully fledged helicopter manufacturer.'

A full mock-up of P2 configured for medical operations will be on display at HAI Heli-Expo 2018. The model, developed with Metro Aviation, will provide the market with a good idea of what the series aircraft will look like.

Its capacity to carry up to seven passengers plus the pilot, its sling-load capacity of 1,500kg and range of 800km with a cruise speed of 140kt places the single-engine platform at the top of the 2.5t class.

'At a cost of $3.3 million, it offers more payload, passengers, speed, range and safety features than others in its class,' Loewenstein claimed.

'This aircraft is totally suitable to the higher end of the light single segment and the lower end of the light twin segment. We are basically tackling a market segment where you have some 100 machines per year to conquer.'

On 21 February, Kopter announced it had received Design Organisation Approval from EASA. The award will help the company with its eligibility for the type certification of the SH09 expected next year.

# SKYe SH09 on Track for Certification as Kopter Receives EASA DOA

By S.L. Fuller | February 21, 2018

EASA, Kopter, Marenco Swisshelicopter, SKYe SH09

Photo courtesy of Marenco Swisshelicopter

Kopter Group, formerly Marenco Swisshelicopter, has received EASA design organization approval. Described as a "major milestone," this approval makes Kopter's SH09 eligible for a type certification.

"We are extremely satisfied to receive this certificate, which acknowledges all the work we've done in building a well performing team and organization," said Andreas Loewenstein, CEO of Kopter. "We thank EASA for their trust and strong support in reaching this key step and look forward to pursuing our close cooperation on our way to certify our new turbine engine helicopter."

This approval confirms Kopter as a duly recognized design organization. According to the company, Kopter is the first helicopter manufacturer in this category to be granted this type of approval since EASA was established in 2002.

"[The certificate] demonstrates that Kopter fulfills the highest European aviation standards and possesses the capability, facilities, manpower, resources and quality assurance systems to design, produce and support the SH09 helicopter, which is already on its way to certification," said Trevor Woods, EASA certification director.

Marenco Swisshelicopter rebranded to Kopter Feb. 1 with an unveiling at its new headquarters in Wetzikon, Switzerland. During the event, Loewenstein indicated to reporters the company would have further announcements during Helicopter Association Internaitonal's Heli-Expo, occurring next week in Las Vegas. Announcements could pertain to pilot training, he hinted. Or, it could concern new Kopter locations, as the company announced last week a new SVP of U.S. business development. Larry D. Roberts, formerly of Eurocopter and Bell Helicopter, is based in Dallas.

# Kopter SH09 fliegt mit neuen Rotorblättern

HELIKOPTER - HONEYWELL HTS900 - KOPTER - MARENCO SWISSHELICOPTER - SH09 - SKYE SH09

*Die gerade von Marenco Swisshelicopters in Kopter umbenannte Firma hat das Design der Rotorblätter ihres Hubschraubers SH09 überarbeitet. Der zweite Prototyp des neuen Musters hob mit den neuen Blättern nun in Mollis zum Erstflug ab.*

Am 14. Februar flog der zweite Prototyp des neuen Helikopters SH09 von Kopter mit neuen Rotorblättern. © Kopter

Am 14. Februar flog der zweite Prototyp (P2) des neuen Hubschraubermusters SH09 des schweizerischen Herstellers Kopter zum ersten Mal mit den modifizierten Rotorblättern. Der Hersteller, der gerade seinen Namen von Marenco Swisshelicopter in Kopter umgewandelt hat, hatte die Blätter modifiziert, um die Blattstruktur und die Oberflächengüte der Rotorblätter zu verbessern. Die Blätter des Helikopters werden aus Faserverbundwerkstoffen gefertigt und unterliegen deshalb keiner Korrosion. Die Rotorblättern entsprechen dem neuen Serienstandard und werden nun im Kopter-Werk in Näfels unweit des Flugplatzes Mollis gebaut.

# Neue Blätter sorgen für mehr Komfort

Beim Erstflug mit den neuen Blättern haben die Piloten P2 (HB-ZXB) im Geradeausflug und bei einigen Kurvenflügen getestet. Die Testcrew berichtet nach der Landung, dass der Hubschrauber mit den neuen Blättern ruhiger fliegen und dass sich die Handling-Charakteristika des Helikopters verbessert hätten.

Ein dritter Prototyp (P3) des von einer Honeywell HTS900-2-Turbine angetriebenen Hubschraubers ist derzeit im Bau. Die Turbine leistet 1.020 Wellen-PS (760 kW). P3 ist notwendig, um zusammen mit P2 die für die Zulassung erforderlichen Nachweisflüge in einem überschaubaren Zeitraum zu absolvieren.

Der SH09 soll bis zu sieben Passagiere transportieren und eine Reichweite von 430 nautischen Meilen (800 Kilometer) aufweisen. Als schnelle Reisegeschwindigkeit bei maximaler Beladung gibt Kopter 140 Knoten an. Kopter sieht den einmotorigen Hubschrauber in einer Vielzahl von Einsatzgebieten, vom Personentransport und Sightseeing-Flüge über Polizei- und Überwachungseinsätze, bis hin zu Rettungs- und Medevac-Missionen.

Kopter wird auf der Weltmesse der Hubschrauber, der Heli-Expo 2018, die vom 26. Februar bis zum 01. März 2018 in Las Vegas stattfindet, als Aussteller vertreten sein.

**Volker K. Thomalla**

## ON THE COVER

Mount Everest looms behind an Airbus H125, operated by Simrik Air. The Nepal Himalayas present an extreme challenge to visitors — whether on the ground or in the air — and are no place for beginner pilots.
**DIRK COLLINS PHOTO**

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# Marenco Swisshelicopter renames as Kopter

**BY THIERRY DUBOIS**

In an event held Feb. 1 at the company's new headquarters in Wetzikon, Switzerland, Marenco Swisshelicopter unveiled its new name — Kopter.

The new moniker is short, gives immediate product recognition and can easily be pronounced on international markets, CEO Andreas Loewenstein emphasized. "As we are an unmistakably Swiss company, the use of a "k" — instead of a 'c' — gives the Kopter a strong, Swiss-Germanic feel. It has the feeling of solidity and dependability — two things that are essential in our industry," he added.

He pledged Kopter will be among the top three civil helicopter manufacturers in 10 years.

The first product of the would-be airframer, a large-cabin single, is keeping its designation as the SKYe SH09. However, it is seeing its target certification date slipping to the right again, as Loewenstein said it will happen "in the next 12-14 months." The first delivery is slated for the second half of 2019.

Prototype P2 is about to complete flight-testing before P3 takes over this quarter, according to Michele Riccobono, executive vice president of technology. After P1, described as "a demonstrator" that flew a mere 1.5 hours, P2 is used to "de-risk" the program.

The latter aircraft has flown some 70 hours. It was used recently to solve a major issue that had been keeping engineers busy for a long time, Riccobono explained. A resonance phenomenon was causing too strong vibrations and high loads on the flight controls. The problem disappeared thanks to "a new set of main rotor blades," made "slightly stiffer." He said they were installed a few weeks ago and successfully flight-tested.

P3 will essentially open the flight envelope. PS4, the first "pre-series" SH09, is planned to fly next summer. They are anticipated to fly 250 and 110 hours, respectively. Kopter will use a flight-test facility in Southern Italy, hoped to provide better weather than Switzerland.

Loewenstein claimed to have more than 166 commitments for the SH09, including 27 firm orders.

The launch of Kopter is an opportunity for the company's leadership to share its ambitious business strategy, as well as news about its upcoming flight-test program and the start of production of the SH09 helicopter. **Kopter Image**

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The second prototype of the SH09 (P2) during flight tests at Kopter's facility in Mollis, Switzerland.
**Benjamin Diekmann Photo**

# MEET KOPTER

In early February, Marenco Swisshelicopter unveiled its new identity as Kopter. More than just a new name and brand, the change reflects 13 months of dramatic development at the fledgling manufacturer. *Vertical* was invited to its new facility in Wetzikon, Switzerland, to find out more.

**By Thierry Dubois**

The doors of the new design office were large enough, so the first prototype of the helicopter had been brought inside. In the small, snowy Swiss town of Wetzikon, Andreas Loewenstein was making a speech that marked "a big moment" in his company's history. Meanwhile, three miles away, that company's founder was probably busy with a complex engineering problem for a customer in biotechnology or solar energy — anything but rotorcraft.

When he opened the Feb. 1 event, Loewenstein had replaced Martin Stucki a mere 13 months before. The latter returned to his original company, Marenco Swissengineering, from which he had spun off Marenco Swisshelicopter to design the SH09 large-cabin single. The name change of the would-be manufacturer, to a more catchy Kopter, caps a year of profound evolution at the helm of the enterprise.

First, the symbols. Marenco is an acronym for "Martin Engineering and Consulting." Its previous headquarters and design office, in Pfäffikon, was inside Stucki's family house. But Stucki is no longer connected to the company, now based in nearby Wetzikon. Hence the need to both physically move the office and change the original name.

Kopter, the new moniker, is short, gives immediate product recognition and can easily be pronounced on international markets, Loewenstein emphasized. "As we are an unmistakably Swiss company, the use of a "k" — instead of a "c" — gives the Kopter a strong,

P2 has been used to "troubleshoot and derisk" the SH09 program, said Kopter CTO Michele Riccobono. The aircraft had flown about 70 hours by early February. **Rino Zigerlig Photo**

Swiss-Germanic feel. It has the feeling of solidity and dependability — two things that are essential in our industry," he added.

Second, the people. Last year, 112 new employees joined Kopter, growing the headcount by 50, to 250. Among them were some former executives of Airbus Helicopters and Leonardo's helicopter division.

Loewenstein officially began in his new position — which he describes as a once-in-a-lifetime opportunity — on Jan. 1, 2017. In his earlier career, he had spent 13 years with then-Eurocopter (now Airbus Helicopters), notably as senior VP for development and strategy.

Christian Gras, a practiced salesperson, is the new chief customer officer. He used to be the CEO of American Eurocopter. He joined last spring.

Chief operating officer (COO) Jan Nowacki joined in September and his previous job was with Airbus Helicopters, too. He was the head of the rotor blade and airframe divisions.

CTO Michele Riccobono, who started working for Kopter in October, is a former Leonardo flight-test engineer. Shaun Dunn, another former Leonardo employee, is the new head of design organization.

Cecile Vion-Lanctuit is now Kopter's head of communications and marketing. She used to be the director of communications at Eurocopter.

All joined a team that already included some industry veterans. Philippe Harache, a former senior executive VP at Eurocopter, became chairman of the board in 2015. Another ex-Eurocopter employee, chief commercial officer Mathias Senes, was on the team before the program was even unveiled.

When CTO Riccobono joined, he immediately saw that a telemetry issue engineers were struggling with was "trivial." The problem is now solved, thanks to his strong background.

This event perfectly illustrates why so many experienced executives have been brought on board. Being "a bunch of seasoned professional helicopter experts," as Harache describes the group, they hope to convince the company's shareholders that it can succeed in a third wide-ranging evolution. In short, they have to transform a design bureau into a fully-fledged helicopter manufacturer.

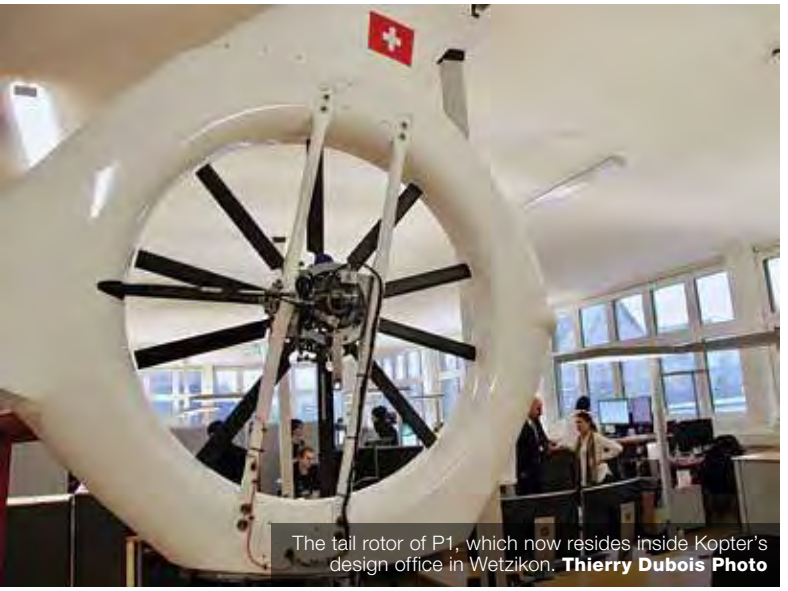
## FROM DESIGN TO PRODUCTION

The founder's leaving, in December 2016, was understood to be the outcome of diverging views with the main shareholder — a fund managed by the Lynwood foundation (the latter entity was created by Russian billionaire Alexander Mamut). Lynwood may have been happy with Stucki demonstrating a breakthrough concept and dissatisfied with slow progress in the next phase — certification and production.

"We are not designing forever," Loewenstein said. Kopter's team aims to move to the production phase as soon as possible.

Andreas Loewenstein, Kopter's CEO, introduces the company's name change from Marenco Swisshelicopter at a special event on Feb. 1, 2018. **Kopter Photo**

P2 sits inside Kopter's facility in Mollis. The aircraft's time in the air is almost up. Going forward, it will be used for ground trials to certify the SH09's drive train. **Thierry Dubois Photo**


The tail rotor of P1, which now resides inside Kopter's design office in Wetzikon. **Thierry Dubois Photo**

The CEO pledged Kopter will be among the top three civil helicopter manufacturers in 10 years.

First, it needs to secure certification from the European Aviation Safety Agency (EASA). After several postponements, this is forecast for "the next 12 to 14 months." The Federal Aviation Administration would then give its nod an estimated six to eight months later. The first delivery of an SH09 is slated for the second half of 2019.

The to-do list before then is still long. Prototype 2 (P2) is about to complete flight-testing before P3 takes over this quarter, according to Riccobono. He described the earlier P1 as "a demonstrator" that flew a mere 1.5 hours, after 30 hours of ground evaluations. It proved "a Swiss company could build a helicopter and make it fly."

But some features were impossible to certify, according to Riccobono. "The flight controls used cables and their friction was so strong that the pilot had to keep the cyclic stick moving, otherwise the breakout force would he been too high." On P2, the issue was resolved with rods.

P2 is used to "troubleshoot and de-risk" the program, and has flown about 70 hours. The aircraft recently solved a major issue that had been keeping engineers busy — a resonance phenomenon that was causing strong vibrations and high loads on the flight controls. The problem disappeared thanks to "a new set of main rotor blades," made "slightly stiffer," said Riccobono. They were installed a few weeks ago and successfully flight-tested.

After Heli-Expo in February, P2 will become a "tie-down helicopter," meaning it will spend 100 hours in ground trials to certify the drive train.

P3 will open the flight envelope, including reaching maximum speed and altitude by September. Then, it will contribute to gathering compliance data for EASA certification.

PS4, the first "pre-series" SH09, is planned to fly in the summer. The design will have been "ironed out" thanks to the work on P3.

P3 and PS4 are anticipated to fly 250 and 100 hours, respectively. For both of them, Kopter will use a flight-test facility in Pozzallo, Italy, for its favorable weather. The flight-testing activity is scheduled to be complete by January 2019.

The relatively small number of remaining flight hours, around 350, is believed to be consistent with the complexity of the aircraft. The SH09 is said to be much simpler than the Airbus H160 medium twin which, at 550 hours in November 2017, was halfway its flight-test campaign. For instance, the Swiss design has no autopilot (yet).

Loewenstein said the versatility of Kopter's engineers and the company's ability to make decisions quickly would enable this quick pace of development — and keep costs low.

## PREPARING FOR MARKET DEBUT

The SH-09's design features a broad use of a new composite material. Its supplier, Villmergen, Switzerland-based Connova is in charge of the fuselage, except the doors and tail boom. It has invested US$2 million and is planning on investing another US$8 million in manufacturing equipment for the SH09 program, said CEO Jon Andri Jörg. The new material is based on a TenCate pre-impregnated carbon fiber that, once cured, absorbs less humidity. In turn, the structure can be made lighter, Riccobono said.

Kopter's engineers target an empty weight of 1,400 kilograms (3,080 pounds), allowing for a very favorable ratio with the payload, which should stand at 1,250 kg (2,755 lb.). P2 has an empty

The company's design team is looking to certify the aircraft with a 130-knot cruise speed and a maximum speed of 140 to 145 knots.
**Eugene Burgler Photo**

The company has now recorded 27 firm orders, a further 19 orders contingent on certification, and 120 letters of intent.
**Benjamin Diekmann Photo**

P2 on display during the company's rebranding in early February. In the background, CEO Andreas Loewenstein can be seen talking to board member Andre Borschberg. **Thierry Dubois Photo**

weight of 1,600 kg (3,525 lb.) and P3 weighs 1,530 kg (3,375 lb.) but those last two numbers include the unspecified weight of the flight-test instrumentation. Meeting the 1,400 kg goal on PS4 involves some structural redesign, Riccobono acknowledged.

The aircraft features a fully redundant hydraulic flight control system. In case one of the two systems fail, the helicopter keeps the same flight envelope and the pilot can fly to the nearest practicable airport for the aircraft to be serviced.

Kopter's design team is shooting for a 130-knot cruise speed and a 140- to 145-knot maximum speed. The fuel tank will contain 200 US gallons (750 liters) and the consumption is predicted at between 42 to 47 US gallons (160 to 180 liters) per hour. Those numbers are estimated to translate into four to five hours of endurance and 600 nautical miles (1,110 kilometers) of range.

The SH09 is priced at US$3.3 million (at 2020 economic conditions) with "a good level of equipment." A new avionics suite, to replace the current Integrated Cockpit Display System from Sagem, will be announced at Heli-Expo. Kopter will also unveil the name of its partner in pilot training at the show.

Loewenstein said Kopter has received 27 firm orders, 19 orders contingent on certification and 120 letters of intent. He said the geographic spread of the orders reflects the global single-engine fleet distribution — 45 percent in the U.S., for instance.

The SH09 is targeted at the replacement market of aging single types, like the Airbus Helicopters AS350/H125 AStar and H130 and the Leonardo AW119 Koala.

Chief customer officer Gras said Kopter intends to develop an IFR version for the emergency medical services (EMS) market in the U.S, where, thanks to its single engine, it will provide an option for operators facing increasing cost pressures.

The company also hopes the SH09's speed, the visibility it offers, and its large cabin (Kopter says it is close to finding a way to squeeze eight passengers inside) will make it an attractive option for sightseeing operations. With SH09 sales in EMS, sightseeing and other markets such as law enforcement, Gras has a target of 600 orders from the U.S. from 2020 to 2030.

To meet Gras' ambitious sales objectives, Loewenstein has plans for more than one final assembly line (FAL). In addition to the one being readied in Mollis (a 30-minute drive from the design office in Wetzikon), one will be built in the U.S. around 2022, and another one in Asia later. Hence the organization centered on a pre-assembly facility located near Mollis. It will feed the FALs with airframes, main rotor heads, gearboxes and rotor blades.

In Mollis, the production rate is planned at "less than 10" in 2019, "less than 20" in 2020, "at least 30" in 2021 and 50 (full capacity) in 2022, COO Nowacki says.

In terms of future development, Loewenstein hinted Kopter might look into a hybrid-electric rotorcraft. A recent addition to the board of directors may help. Andre Borschberg headed the design of Solar Impulse 2, the fixed-wing aircraft that performed transoceanic flights on sun power.

Lynwood is now the only shareholder and, while Loewenstein believes it is here to stay, a capital increase is looming. Kopter is engaged in a capital-raising effort because "this is the right time — certification is approaching and the company is becoming more international," he said. The company hopes to raise between US$150 and 200 million by year-end.

After a busy 12 months full of change, the next 12 promises to be just as interesting for the ambitious Swiss company.

**Thierry Dubois |** A freelance writer specializing in aerospace technology, helicopters and business aviation, Thierry also moderates international conferences on aviation technology topics.

# Evolution of a Swiss Masterpiece

*The Marenco Swisshelicopter SKYe SH09 Becomes the Kopter SH09*

The second prototype of the SH09, P2 (HB-ZXB), clearly showing the vertical reference window on the floor of the aircraft. P2 has done most of the flight testing to date. (Kopter photo)

**By Ian Frain**

In the past year, the Swiss helicopter company has changed its leadership, headquarters, rotor system, corporate name and its aircraft name, all the while expanding and refining its first product.

In November 2013, in an atmosphere of drama and high expectations, Marenco Swisshelicopter unveiled its SKYe SH09 prototype for the first time. Held at its Mollis Airport facilities in northeast Switzerland, the rollout was a major step for the company, which was originally founded by Martin Stucki in 2009 (hence the designation SH09, for "Swisshelicopter 2009").

The aircraft made its first flight on Oct. 2, 2014, but the company halted flight tests after 100 flight hours to focus on completing the second prototype, P2, which incorporated a modified bearingless rotorhead and new rotor blades to reduce vibrations. P2 performed its first flight on Feb. 26, 2016.

Andreas Loewenstein took the helm of the company in January 2017 after Stucki stepped down as CEO. Loewenstein had previously held several senior executive positions, including at Aerospatiale, Airbus Group (then EADS) and Airbus Helicopters (Eurocopter). Since 2010, he had been the executive vice president of strategy partnership and innovation (CTO) at Direction des Constructions Navales (DCNS), "the European leader in naval defence and major player in marine renewable energy based in Paris."

The first prototype, P1 (HB-ZXA), was unveiled with lots of fanfare (and dry ice fog) on Nov. 28, 2013. (Author photo)

On Feb. 1, 2018, at an inaugural ceremony at the new corporate and engineering facility in Wetzikon (just outside of Zurich), Loewenstein announced the rebranding of the company with the new name, Kopter Group: "Our new name provides us with immediate recognition. It allows us to own a word that is synonymous with helicopter travel. As we are an unmistakably Swiss company, the use of a 'k' — instead of a 'c' — gives the Kopter a strong, Swiss-Germanic feel. It has a feeling of solidity and dependability — two things that are essential in our industry."

A close-up of the P1 dashboard at its unveiling. The operational suite will feature an integrated cockpit display system. (Author photo)

The company also dropped the "SKYe" part of the name, redesignating their aircraft more simply as the "Kopter SH09."

## SH09

Over the past year, Kopter has nearly doubled its staff and now employs 250 across its headquarters and assembly facilities in Mollis and Näfels, Switzerland.

The company says its "purpose is to develop, produce and support a new generation of helicopter" and that its single turbine SH09 "offers the highest standards of safety, comfort and performance, coupled with low operating costs. Built for the most demanding missions, it provides the largest cabin/cargo volumes, outstanding modularity and the latest generation of electronic systems."

The SH09 comes in the 5,500 lb (2.5 t) class with an all-carbon composite airframe. It is envisioned flying many missions for both corporate / VIP, and within the parapublic marketplace, such as police/emergency medical service (EMS), search and rescue (SAR), and utility.

The SH09 vertical reference window coupled with the capacity of an external load of 3,300 lb (1,500 kg) are specifically intended for underslung cargo work or the firefighting missions. Powerline construction, inspection and repair is another segment into which Kopter is looking to enter with the SH09.

In the parapublic police/airborne surveillance role, the SH09 can operate with 5 hours of endurance, with a range of some 430 nm (800 km). The low noise signature and the use of the vertical reference window are particularly well suited to the surveillance role. Likewise, for the EMS role, the rear clamshell doors coupled with the high clearance of the tailboom ensures that medical personnel can load and unload patients and medical equipment with ease and safety. Another feature of the cabin design is the flat floor, along with sliding doors on either side of the aircraft, thus making loading or unloading patients, personnel or cargo possible from either side.

Kopter intends to develop mission-specific equipment to support entry into these mission scenarios. These could include bear paws for landing in snow or adverse ground, provision of searchlights, cargo hook, cable cutters, etc.

## A Sound Structure

The SH09 features a full-composite fuselage and tail rotor, as well as all-composite main and tail rotor blades (made using TenCate epoxy resin systems).

The main rotor system is now a bearingless five-bladed design with safety, noise reduction and low maintenance in mind, powered by a Honeywell HTS900-2 engine. Notable also is the Marenco Shrouded Tail Rotor (MAESTRO), which contributes to low noise emission, ease of maintenance and additional safety.

The airframe was designed to excel in aerodynamics, spaciousness, and ease of loading and unloading. The composite cell of the SH09 fuselage is designed with high crash resistance technology utilized in the Formula 1 racing industry. Likewise in the passenger role, the aircraft has comfortable and crashworthy individual seating for five to eight people.

The Honeywell HTS900 is designed for helicopters to operate at hot and high altitude. It is a high power-to-weight, dual-compressor design with a Fully Automatic Digital Engine Control (FADEC) to ease pilot workload, and weighs only 338 lb (153 kg).

## An All 'Round View and Ease of Workload

The cockpit was designed with pilot ergonomics, situational awareness and ease of workload in mind. The integral vertical reference window, located between the pilots' seats, offers a centralized bird's eye view for the crew involved in long line and underslung load operations. The avionics include the state-of-the-art cockpit display system, intending to optimize mission, management and flight performance, and a night vision goggle (NVG) compatible cockpit.

The SH09 MAESTRO tail rotor with dual paint schemes at Heli-Expo in March 2017: Air Zermatt (starboard side) and Alpinlift Helikopter (port side) are the company's first two Swiss customers. (Author photo)

The SH09 will feature an integrated cockpit display system (ICDS). The primary flight display and engine monitoring system has a number of features that contribute to reducing pilot workload, as well as improved situational awareness, which is achieved by the customized engine displays that have LED interfaces built into the system. Among many other functions is a fully configurable user-defined checklist. Crucial information including primary flight data and navigational information, and engine management data can be displayed in split map/engine screen mode.

The system enables pilot and passengers to get a better view of the outside world by the use of external mount camera and video inputs. There are also custom user databases (operators can supply data points for moving maps) which can aid navigation. The ICDS also records all displayed data for later review and analysis.

A close-up of the original P1 rotor system. This was completely redesigned for P2 with a bearingless rotor system. (Author photo)

## The Three Ps and Iron Bird

Kopter says that the key ingredients in successful innovation at the company and the design of the SH09, are the "3Ps" — people, process and philosophies. There are also three prototype airframes — P1 (HB-ZXA), P2 (HB-ZXB) and P3 (HB-ZXC).

P3, which comes close to the serial version, was rolled out in June 2017. The majority of the flying activities will be taking place in Sicily because of the weather conditions, especially during the summer of the hot and high temperate which are available. Both prototypes will contribute to achieving a quicker progress to the Type Certificate.

Through November 2017, the P2 airframe had more than 100 hours of rotor turning time, including 55 hours of flight tests. Kopter previously completed 600 hours of endurance testing on the tail drive train (including the tail gear box and drive shaft), and is now completing qualifications of the main and tail rotor components with its suppliers; another 300 hours of testing was conducted on other dynamic components. The company also conducted successful drop tests on the landing gear, and qualification tests on the fuel system and bladders.

During the flight tests, P2 flew at 120 kt (220 kt) and 3,000 ft (900 m) about sea level. The testing included maneuvering flights and autorotations, as well as developing takeoff and landing profiles. Kopter says that the aircraft is able to perform a quick start up, and had significant power reserves at 120 kt. In flight, the aircraft had low vibrations levels for a very smooth ride, as well as low fuel consumption and minimal internal noise.

Later, P2 will be cannibalized into an iron bird test resource. The iron bird platform is a framework where the major working components are installed in the relative locations found on the actual airframe, a skeletal version of the SH09, in a test installation. One major advantage of the iron bird is easy access to components out in the open to see how they work as modifications are made.

## A Global View

Over the last five years since the aircraft's unveiling, the SH09 has garnered numerous orders and letters of intent. In March 2015, Johannesburg-based Henley Air ordered one SH09, becoming the first South African customer, and marking up the orders to that point to 60. Last year at Heli-Expo in Dallas, Texas, the SH09 mock-up was displayed in the colors of both Air Zermatt (starboard side) and Alpinlift Helikopter (port side), celebrating the company's first two Swiss customers.

## Kopter SH09 Technical Data

| | | |
|---|---|---|
| **Seating capacity** | 1 Pilot + up to 7 passengers | |
| **Sling-load capacity** | 3,300 lb | 1,500 kg |
| **Maximum operational weight with external load** | 6,170 lb | 2,800 kg |
| **Maximum take-off weight with internal load** | 5,842 lb | 2,650 kg |
| **Power plant** | Honeywell HTS900-2 | |
| **Maximum take-off power** | 1,020 shp | 760 kW |
| **Cruise speed (at max takeoff weight)** | 140 kt | 261 km/h |
| **Maximum range (with standard fuel tanks)** | 430 nm | 801 km |
| **Maximum endurance (with standard fuel tanks)** | 3.7 to 5 hours | |

The third SH09, P3 (HB-ZXC) was rolled on June 28, 2017, and will conduct the initial certification testing. (Kopter photo)

As of mid-2017, there were 12 fixed-purchase contracts and more than 100 international purchasing commitments. Kopter is now completing its fourth aircraft, the PS04 prototype (PS standing for "Pre-Series"), which is expected to fly early this year. PS04 will complement P3 and complete the type's certification testing. In parallel, the company has already begun ordering the long lead parts for serial production.

P3 and PS04 will jointly serve to obtain certification with the European Aviation Safety Agency, followed soon thereafter with validation by the US Federal Aviation Administration.

The Kopter SH09 is a clean-sheet, next generation helicopter, designed with the pilot in mind, with a modern, spacious cabin and unmatched visibility. The coming months will be very exciting, as the third and fourth aircraft conduct their certification testing, allowing first deliveries in 2019.

Kopter has a very promising future indeed.

**About the Author**

Ian Frain runs an aviation research consultancy in Cambridge, United Kingdom, called Helian. He has a BSc in engineering studies — aerospace and mechanical — from University of Hertfordshire, and has worked in offshore and parapublic helicopter maintenance, and as a researcher in an aviation publishing company. He can be reached at *ian@hel-ian.eu*.

# Kopter Branding Breathes Alpine Air into Swiss Helicopter Program

> SH09 SINGLE-ENGINE HELO FLIGHT TESTING HEADED TO SICILY

> TWO PROTOTYPES SET TO FLIGHT TEST TO SUPPORT CERTIFICATION

**Tony Osborne** London

Kopter is the new name for Switzerland's fledgling helicopter OEM Marenco Swisshelicopter. But can a new Germanic-style identity and a fresh-faced management team get the long-running development of the company's SH09 single-engine light helicopter back on track?

Andreas Loewenstein, who took over as Kopter Group CEO in January 2017, says customers are "impatient" to get the aircraft, and "interest is increasing," despite certification timetables being pushed to the right again and again since the SH09's first flight last Oct. 14.

"The helicopters in the single-engine segment are rapidly aging; they were certified 30-40 years ago," he says. Operators are looking for new technology and Kopter's competitors such as Airbus with its H125, Bell with its 407, and the Leonardo AW119 Koala have not been keeping up.

This is largely true, the two competitor aircraft have been given cursory cosmetic enhancements, with upgraded avionics keeping them relevant. Bell's introduction of a glass cockpit with the 407GX and GXP has given new life to that program and Airbus is promising digital upgrades of its single-engine family to be announced at HAI Heli-Expo in late February.

The Honeywell HT900-powered SH09 is a 2.65-metric-ton conventional helicopter with a five-blade main rotor and a shrouded tail rotor. Capable of seating seven passengers, the SH09 also has been designed with clamshell doors in the rear fuselage, a feature usually found only on larger twin-engine models. Other design characteristics include a carbon-fiber airframe.

Conceivably, the SH09 also could siphon market share from popular light-twins such as the Airbus H135, Bell 429 and Leonardo AW109.

But Kopter Group's progress has been slow; the first prototype, P1, flew a total of just 1.5 hr., and the second, P2, has flown 70. Attention is now on a third prototype, P3—due to fly in March—and on an aircraft codenamed PS4, a preproduction-standard aircraft set to fly this fall. The latter two will be used for the extensive flight-test program that will be needed if the company wants to achieve its timetable of European Aviation Safety Agency (EASA) CS27 certification in early 2019, with FAA certification expected several months later.

First customer deliveries are planned for the second quarter of 2019.

To increase the tempo of flight testing, the team will move away from the mountainous valleys of Switzerland and head for Sicily seeking weather more conducive for the test regime.

At Kopter's headquarters in Wetzikon near Zurich, Loewenstein says the company is transforming "from an engineering organization into a helicopter manufacturer." He adds, "We have had a great development program, but now we need to bring the aircraft to the market."

Part of this has been about building the company's product support and supply chain from naught. While assembly facilities are being opened at the nearby Mollis airfield, a pre-assembly supply-chain facility and a final assembly line building have all been established. Its workforce of 253 is set to grow by around 100 during 2018.

Loewenstein is looking beyond the immediate future. Noting that nearly half of its current orders are from U.S.-based clients, he sees the possibility of an assembly line there. And given that China's burgeoning market cannot be underestimated, he suggests that a final assembly site in Asia could be in the cards at some point.

Kopter already has sold out its first two years of production. Loewenstein says the company holds 27 firm orders with down payments, while 19 more are contingent on certification. The company also has 120 letters of intent, of which the majority, he says, will be turned into contracts.

Concurrent with pursuing certification, Kopter has its engineering team working on an array of potential mission equipment. Loewenstein, saying he wants the aircraft to be the "Swiss army knife" of the air, is keen to avoid the mistakes of other OEMS, namely keeping some customers waiting for mission equipment to be certified.

Among the kits already in progress is an emergency medical service (EMS) interior designed by Air Methods, while a cargo hook for external load lifting has been developed for utility work. Other customers for the SH09 include air taxi and aerial tourism companies. EMS operations with the aircraft are likely to be restricted to the U.S. for now as EASA rules prohibit EMS operations with single-engine aircraft.

Kopter still has a lot to prove, particularly to its investors, but Loewenstein says the change in name helps let people know "we have arrived—and we are here to stay."

KOPTER GROUP

Kopter is planning to pick up the pace of flight testing by moving to Sicily to take advantage of better weather.

ROTOR&WING INTERNATIONAL

# Marenco Rebrands to 'Kopter'

By S.L. Fuller | February 27, 2018

HeliExpo18

Andreas Löwenstein, CEO of what was Marenco Swisshelicopter, addressed a crowd Feb. 1 at the company's new headquarters in Wetzikon, Switzerland: "We are stepping away from an engineering company. We were an engineering company. And we are becoming — I would say, 'today,' — a full-fledged helicopter manufacturer. And this, we have to mark."

The company chose to mark the occasion by doing away with "Marenco Swisshelicopter." The name was too long, it said. People from some countries found it difficult to pronounce. Thus, the company that has been developing the same helicopter for nearly 10 years with delayed certification targets has been replaced.

Now there is Kopter, spelled with a "K" to make evident the company's roots. Löwenstein said with conviction that the SKYe SH09 (the single-engine helicopter that kept its name) will be certificated by EASA next year, aimed for the first quarter.

In 2011, the company was hoping to have certification activities completed by 2015 or 2016. But then 2016 came, and what was then Marenco readjusted its aim for certification in 2017. Then it was March 2017, and newly appointed Löwenstein, who took over after CEO Martin Stucki left, readjusted aim once again for a 2018 certification.

But now, the Kopter team is aiming for the first quarter of 2019, with FAA certification following no more than eight months later.

Is the industry taking Kopter seriously this time? CTO Michele Riccobono told R&WI that it is. Proof lies, he said, in the fact that the industry is approaching the company, wanting to be part of the program. Operators are wondering how to order, and vendors are wondering if Kopter is looking for partnerships.

Löwenstein said Kopter believes that if its current volume of orders continues as it is, the first two or three years of aircraft will be sold out. Kopter has received 27 firm orders with down payments, and 19 more are contingent on certification. Löwenstein said the company also has 120 letters of intent.

In 10 years, Löwenstein expects Kopter to be one of the top three OEMs in the civil market. The SH09 is to compete with the Leonardo AW119, Bell Helicopter 407, and Airbus Helicopters H130 and H125.

The down helicopter market has not discouraged him. The SH09 is not concerned with the oil and gas segment, Löwenstein said. The helicopter industry is also a cycle, he continued.

"'Cycle' means down cycle, but after the down cycle, you have always an up cycle," he said. "We are not the only ones to see and to believe that we are now in front of the upside."

Another reason for his confidence is that he believes the SH09 fills a gap. Existing products in the single-engine market, Löwenstein said, were developed in the 1970s and 1980s.

"Every change of the fleet in this segment, depending on the countries where you are, is somewhere between 20 and 25 years. So there's a huge replacement market and replacement need," he said. "What we believe in is that operators, once they feel that this aircraft is really delivering a difference, they will start replacing the fleet with our aircraft."

A drawback to a single-engine, however, is EASA rules. Right now, the emergency medical services (EMS) market in Europe is off limits for the SH09 due to EASA single-engine operations rules. The Kopter team thinks EASA could be reconsidering those contraints.

Kopter's SH09 will be on display at its booth (N4615).

# ENTREPRISES

## BANQUES

### Gazprombank Suisse interdit par la Finma d'accueillir de nouveaux clients privés

La Finma a interdit à Gazprombank Suisse d'accepter de nouveaux clients privés, le gendarme helvétique des marchés financiers ayant constaté «de graves lacunes dans le dispositif de prévention du blanchiment d'argent» concernant ce segment de clientèle, notamment «des personnes politiquement exposées possédant des sociétés offshores». La banque russe doit également «surveiller de près les relations existantes» et constituer un comité des risques. Le gendarme a conclu que, entre 2006 et 2016, «Gazprombank Suisse avait gravement enfreint les obligations de diligence exigées par la loi sur le blanchiment d'argent», en catégorisant à plusieurs reprises «les risques de ses relations d'affaires de manière incorrecte ou trop tard».La Finma a mené des enquêtes sur une trentaine de banques suisses sur la base d'informations issues des Panama papers. Suite à ces investigations, elle a ouvert une procédure «d'enforcement» à l'encontre de Gazprombank Suisse. – (awp)

### PKB sanctionné pour son implication au Brésil dans le méga-scandale Petrobras

La banque privée PKB a écopé d'une sanction de plus de 1,3 million de francs par l'Autorité fédérale de surveillance des marchés (Finma) pour son implication dans le méga-scandale de corruption autour du géant pétrolier brésilien Petrobras. Une décision qui prévoit la restitution de cette somme correspondant à une partie des revenus encaissés par PKB pour la «gestion des relations qui se sont révélées problématiques». La banque, qui prétend avoir «toujours appliqué les standards les plus élevés», parle de «première» et dit avoir été «abusée par un employé malveillant». La décision de la Finma ne devrait pas avoir d'impact sur les activités de la banque, ni sur le plan opérationnel, ni sur le plan financier, les coûts de la procédure ayant été provisionnés dans les comptes 2017. La banque dispose en outre d'un ratio de fonds propres durs (Tier 1) de 24%, supérieur aux exigences légales. – (awp)

### La banque cantonale de Lucerne améliore ses résultats

La banque cantonale de Lucerne (LUKB) a enregistré en 2017 un bénéfice net en hausse de 6,4% à 198,4 millions de francs et un résultat d'exploitation en croissance de 2,3% à 214,7 millions, et ce en dépit de charges opérationnelles qui ont pris l'ascenseur à 234,6 millions (+8,6%).La banque a notamment subi des coûts en raison de la mise en place d'un centre de compétences pour les produits structurés, qui doit ouvrir cette année. La direction s'attend à engranger 1 milliard de francs de placements dans ce segment d'ici 2021/2022. Les recettes ont quant à elles augmenté tous azimuts de 6,3% à 475,1 millions. Le produit des activités de négoce a profité d'une hausse de 2,8% à 30,5 millions. La performance a également été au rendez-vous au niveau des avoirs sous gestion, qui ont crû de 5,4% à 29,7 milliards, notamment grâce à l'afflux d'argent nouveau à hauteur de 777 millions. – (awp)

### La banque cantonale bernoise renforce son bénéfice net

La banque cantonale bernoise (BCBE) est parvenue l'an dernier à étoffer son bénéfice net de 6,3% à 137,4 millions de francs. Les cré

# Kopter Group veut devenir la meilleure référence mondiale

**HÉLICOPTÈRES.** Ce sera le premier fabricant suisse de pointe dans ce domaine. En faisant valoir des qualités supérieures.

PHILIPPE REY

Kopter Group, anciennement Marenco Swiss Helicopter, a présenté hier son nouveau nom et son prototype dans ses nouvelles installations à Wetzikon près de Zurich (centre d'engineering) et son site d'assemblage et de test de vol à Mollis dans le canton de Glaris. Cette entreprise a l'ambition de devenir la référence mondiale dans le domaine des hélicoptères en fabriquant le tout premier hélicoptère suisse, ce qui paraît réaliste compte tenu des qualités techniques, du savoir-faire et de la réputation suisses. A l'image de ce que réalise Pilatus en Suisse avec ses avions.

Si tout se passe bien, le premier hélicoptère (SH09) aura été fabriqué et livré en 2019. Kopter, qui emploie 260 personnes dont une grande part dans la recherche et développement, bénéficie déjà de 27 commandes fermes et de 19 précontrats. Plus d'une centaine de lettres d'intentions existent. Le prix de vente s'élève à 3,5 millions de dollars. Le défi est de taille puisque Kopter se heurte à deux gros concurrents : Airbus et Bell Helicopter, qui sont les deux acteurs présents dans le segment que cible Kopter. Toutefois, ce dernier a l'avantage d'être focalisé sur ce segment contrairement à Airbus par exemple et d'avoir aujourd'hui une équipe de management expérimentée.

**ANDREAS LÖWENSTEIN.** *Devenir une entreprise internationale aux racines et valeurs suisses dans une niche compétitive.*

### Cercle d'actionnaires élargi

Le projet est sérieux et conduit par des gens de qualité, tels Philippe Habache, président du conseil d'administration, Andreas Löwenstein, CEO, qui possède 28 années d'expérience managériale dans le secteur de l'aéronautique, et Marcel Klaus, CFO, ancien directeur financier de Swiss International Airlines. Kopter a aujourd'hui un seul actionnaire : une fondation de famille qui a été mise en place par le milliardaire russe Alexander Mamut. Rothschild a été mandatée pour lever des capitaux de 150 millions de francs et faire entrer des nouveaux investisseurs. L'intérêt semble grand à voir le nombre de personnes présentes hier à Wetzikon et Mollis. Les partenaires fournisseurs de Kopter étaient également présents, parmi lesquels Connova, fabricant suisse de solutions de composites à haute performance. Le produit est très innovant, il met Kopter en position de bousculer les barrières d'un duopole et de gagner des parts de marché. Ce groupe, qui été créé en 2007, vise la certification européenne (AESA), après dix années de développement. Il a investi jusqu'ici près de 270 millions de francs pour développer le SH09, pour garantir aux opérateurs une performance opérationnelle, une sécurité et un cycle de vie économique supérieurs qui font la différence. SH09 dispose des plus gros volumes au plan de la cabine et du cargo, d'une modularité au-dessus de la moyenne et des systèmes électroniques de la dernière génération. Cet hélicoptère à turbines est bâti pour les missions les plus exigeantes.

Kopter a pour objectif d'être rentable d'ici cinq ans. Il peut devenir rapidement rentable une fois que la commercialisation deviendra effective, indique Andreas Löwenstein. Dans quelques années, la production annuelle doit se monter à 150 hélicoptères. Ce qui nécessite beaucoup de capital pour y parvenir. Cependant, Kopter se trouve aujourd'hui en position d'avoir une reconnaissance immédiate, à savoir une acceptation internationale en faisant valoir le produit le plus complet en termes de sécurité et le plus moderne. Son organisation de vente est également étoffée, une filiale a été ouverte aux Etats-Unis. ■

# KOPTER GROUP IGNORES DOWNTURN

Downturn? What downturn? For Kopter Group, formerly Marenco Swisshelicopter, attention is not on the current economy at all, but rather on bringing the company's SKYe SH09 multi-purpose, light single-engine composite helicopter to market.

Under development since 2009, the carbon composite SKYe SH09 can carry five to eight people, has rear clamshell doors, and a flexibly configurable large cabin. At present Kopter has two working prototypes (P2 and P3; P1 having been retired) in test flight mode, and a third helicopter (PS4) is being built for EASA type certification tests in 2018. The company's goal is to start production by mid-2018 and begin delivering finished SH09s in 2019.

"When it comes to our helicopter, we see the market for sales becoming more robust," Kopter CEO Andreas Löwenstein said. "This is because the SH09's clean sheet design gives customers a roomy twin-engine-type cabin on a single helicopter platform, with lots of outside visibility and interior space." He added that the SH09 features fully redundant hydraulic and electrical systems, making it more akin to a twin-engine helicopter in high safety standards than a single engine.

At present, Kopter has "close to 30 SH09s" on firm orders or precontracts to 10 customers, with memorandums of understandings ("I call them prearrangements," Löwenstein said) for an additional 118 helicopters. "I would say this gives us quite a good starting point for beginning production in 2018," Löwenstein said.

As for potential customers for the SH09? "We are targeting EMS, law enforcement, and tourism, among other sectors," Löwenstein replied. "The SH09's spacious layout and easily reconfigurable cabin, plus its safety features and low operating costs, make it a economical alternative even to traditional twins."

# Neuer Schwung für Helikopterprojekt

*Kopter will 2019 den ersten Schweizer Helikopter an die Kundschaft liefern*

Die Firma Marenco hat sich in Kopter umbenannt und eine Halle am Flugplatz Mollis bezogen. 2019 will das Unternehmen mit der Fertigung der ersten 27 bestellten Helikopter beginnen.

CHRISTOPH G. SCHMUTZ, MOLLIS

Die Aussichten haben sich verbessert, dass in der Schweiz nicht nur ein düsengetriebenes Flugzeug, sondern auch ein Helikopter gebaut wird. Die Firma Marenco, sie nennt sich neu Kopter, hat am Donnerstag in Mollis (GL) eine neue Fertigungshalle eingeweiht. Diese riecht noch nach Farbe und ist – abgesehen von Prototyp Chantal – gähnend leer. Während das in Stans beheimatete Unternehmen Pilatus über jahrzehntelange Erfahrung im Flugzeugbau verfügt, startet Kopter ohne derartigen Hintergrund in das Abenteuer Helikopterfertigung.

*Der zweite Prototyp des Helikopters der Firma Kopter in Mollis.* KARIN HOFER / NZZ

### Turbulente Anfangsjahre

Entsprechend turbulent verlief die Gründungs- und Pionierzeit der Firma. 2007 gründete der Ingenieur Martin Stucki Marenco Swisshelicopter. Geldsorgen und Verzögerungen waren stete Begleiter des so visionären wie verwegenen Vorhabens. Ende 2016 verliess der geistige Vater des Projektes Marenco überraschend. Er wurde durch Andreas Löwenstein als Geschäftsführer ersetzt. Löwenstein ist ein erfahrener Manager aus der Luftfahrtindustrie und arbeitete früher etwa für Eurocopter (heute: Airbus Helicopters). An ihm liegt es, die industrielle Fertigung aufzubauen und den Verkauf des SH09 genannten Helikopters anzukurbeln.

Das Bestellbuch lässt sich mittlerweile durchaus sehen. Kopter hat 27 Festverträge sowie 19 Vorverträge, die bei einer erfolgreichen Zertifizierung des Helikopters automatisch in Kraft treten. Dazu kommen über 120 Absichtserklärungen für den Kauf einer Maschine. Löwenstein rechnet damit, dass rund 70% davon in Bestellungen umgewandelt werden. Zu den ersten Kunden zählen in der Schweiz unter anderem Air Zermatt und Alpinlift.

Kopter-Verwaltungsratspräsident Philippe Harache, auch er arbeitete früher für Eurocopter, sagte an der Einweihung vor Medien und Mitarbeitern am neuen Hauptsitz in Wetzikon, dass es in der Helikopterbranche seit Jahren keinen Innovationsschub mehr gegeben habe und deshalb das Produkt der Firma auf grosses Interesse stossen werde. Das Unternehmen will sich im Markt der einmotorigen Hubschrauber etablieren, der kräftig wächst. Löwenstein schätzt, dass in den von Kopter anvisierten Marktsegmenten pro Jahr knapp 1000 Maschinen verkauft werden. Der grösste Anbieter in dem Bereich ist laut eigenen Angaben Airbus (Marktanteil: 50%), vor der US-Firma Bell (18%) und dem italienischen Konzern Leonardo (17%).

Kopter will den Kunden für rund 3,3 Mio. $ pro Helikopter mehr Leistung bieten, als in der anvisierten Preis- und Grössenklasse üblich ist. Der SH09 ist dank Karbon-Bauteilen leichter, er kann ferner mehr Passagiere befördern, und er fliegt schneller, höher und weiter als vergleichbare Maschinen. Denkbar ist etwa der Einsatz bei touristischen Rundflügen. Aufgrund der innovativen und leichten Bauweise kann der Helikopter mehr Touristen mitnehmen und verbraucht weniger Treibstoff. Das erhöht die Einnahmen und senkt die Kosten für den Betreiber.

BILDSTRECKE
NZZ nzz.ch/wirtschaft

### Zertifizierung als letzte Hürde

Entscheidend ist nun, dass das Unternehmen die Zertifizierung für seinen Helikopter erhält. Die Vorbereitungen dafür sind laut Löwenstein auf guten Wegen. Er hofft, die Zulassung im ersten Quartal 2019 zu erhalten. In der zweiten Hälfte des gleichen Jahres sollen dann endlich die ersten Maschinen ausgeliefert werden. Kopter will die Fertigung langsam aufbauen. Für 2019 plant man 6 Hubschrauber, 2020 dann 18 bis 20 und später pro Jahr 50 oder mehr.

Mit erfahrenem Personal aus der Luftfahrtindustrie, das grösstenteils erst 2017 zur Firma gestossen ist, baut Löwenstein nun in Mollis und Näfels die industrielle Fertigung auf. Um die ambitionierten Ziele zu erreichen, soll die Belegschaft 2018 von 260 auf 360 Personen erhöht werden. Das alles kostet viel Geld, bevor erste Einnahmen fliessen. Dafür hat bisher in erster Linie der russische Bankier Alexander Mamut sein Portemonnaie geöffnet. Schwarze Zahlen erwartet die Firma frühestens 2022.

# Facebook mit 47 Prozent mehr Umsatz

*1,4 Milliarden User pro Tag*

C. H. New York · Facebook setzt seinen aussergewöhnlichen Erfolg fort. Wie das weltweit grösste soziale Netzwerk am Mittwoch nach US-Börsenschluss mitgeteilt hat, ist der Umsatz im per Ende Dezember abgelaufenen Geschäftsjahr um 47% auf 40,7 Mrd. $ und der Gewinn um 56% auf 15,9 Mrd. $ gestiegen. Um dieses Wachstum zu bewerkstelligen, hat das Unternehmen seine Belegschaft im zurückliegenden Geschäftsjahr um fast 50% auf 25 100 Mitarbeiter aufgestockt. Die Betriebsmarge betrug im Geschäftsjahr 50% und im vierten Quartal gar 57%. Damit führt Facebook punkto Profitabilität viele Technologiekonzerne an: Die Betriebsmarge liegt weit über jener von Microsoft, Alphabet oder auch von Apple.

Das 2004 von Mark Zuckerberg gegründete soziale Netzwerk aus dem Silicon Valley finanziert sich fast vollständig über Werbung. Sein enormer Erfolg basiert auf der Grösse und dem weiterhin starken Wachstum der Nutzergemeinde sowie auf den firmeneigenen Algorithmen, die die Werbung zielgenau placieren. Im Dezember loggten sich rund 1,4 Milliarden Menschen mindestens einmal am Tag ein; das sind 14% mehr als im Vorjahresmonat. 2,1 Milliarden Nutzer griffen mindestens einmal im Monat auf Facebook zu, was ebenfalls ein Plus von 14% darstellt. Pro Nutzer konnte Facebook im vierten Quartal vor allem mit Werbung $ 6.18 einnehmen. Auf dem Markt für digitale Werbung gehört Facebook zu den grössten Anbietern. Laut Emarketer hat der Konzern einen Marktanteil von 17% und ist damit nach der Alphabet-Tochter Google (Marktanteil von 32%) der zweitgrösste Werbeträger.

Im vergangenen Jahr war erstmals massiv gesellschaftspolitische Kritik über den Konzern hereingebrochen. Diese hatte die Diskussion darüber in Gang gesetzt, inwiefern das Unternehmen verantwortlich ist für Inhalte, die von Nutzern, von Dritten wie Medienhäusern oder von der werbenden Wirtschaft in dem Netzwerk placiert werden. Der Konzernchef Zuckerberg hatte daraufhin angekündigt, diese Inhalte vermehrt zu kontrollieren. Diese Massnahmen werden wohl Auswirkungen auf die Profitabilität des Unternehmens haben.

# Ein «Modicare» für Indien

*Die Regierung stellt ein Krankenversicherungsprogramm für die Ärmsten in Aussicht*

VOLKER PABST, CHENNAI

Der indische Finanzminister Arun Jaitley hat am Donnerstag die Lancierung des grössten staatlich finanzierten Gesundheitsschutzprogramms der Welt angekündigt. Für 100 Mio. arme Familien sollen Gesundheitskosten von bis zu 500 000 R (7300 Fr.) jährlich übernommen werden. Schätzungsweise eine halbe Milliarde Menschen käme somit in den Genuss einer Absicherung, die hoch genug ist, um in Indiens vergleichsweise günstiger Gesundheitsindustrie mehrere operative Eingriffe zu decken. Bisher gibt Indien weniger als 1% des BIP für gesundheitspolitische Zwecke aus, ein ausserordentlich tiefer Wert. In Anspielung auf das amerikanische Obamacare-Programm kursierte in der nie um schmissige Wortspiele verlegenen indischen Presse kurz nach Jaitleys Rede schon der Begriff von Modicare.

### Mittelstand wird nicht entlastet

Die Ankündigung erfolgte im Rahmen der jährlichen Präsentation des Regierungshaushalts, der angesichts der anstehenden nationalen Wahlen im Sommer 2019 und mehrerer Urnengänge auf Gliedstaatenebene mit besonderem Interesse erwartet worden war. Neben dem Gesundheitsprogramm wurden auch andere Massnahmen für die – meist ländliche – ärmere Bevölkerung angekündigt. Die staatlichen Abnahmepreise für gewisse landwirtschaftliche Güter etwa sollen erhöht werden. Zudem werden grosse Investitionen in die ländliche Infrastruktur in Aussicht gestellt.

Weniger zufrieden mit dem wirtschaftlichen Rahmenprogramm für das im April beginnende Finanzjahr dürften die Angestellten in der formalen Wirtschaft sein. Die Hoffnung auf eine Entlastung bei den Einkommenssteuern wurde nicht erfüllt. Die Angehörigen der Mittelklasse dürften auch die Erhöhung gewisser Importzölle am stärksten zu spüren bekommen, etwa für Konsumgüter wie Mobiltelefone oder Fernsehgeräte.

Indiens Premier agiert im Wahlkampfmodus
Kommentar auf Seite 11

Obwohl KMU steuerlich entlastet werden durch eine Senkung der Gewinnsteuern von 30 auf 25% – Unternehmen mit einem Umsatz von mehr als 2,5 Mrd. R sind davon ausgeschlossen –, reagierte auch die Wirtschaftswelt eher skeptisch auf den neuen Haushaltsplan. Die Wiedereinführung der Kapitalgewinnsteuer von 10% auf langfristige Anlagen sorgte für einen unmittelbaren Kurseinbruch an der Mumbaier Börse, deren Leitindex Sensex im Einklang mit den globalen Märkten in den vergangenen Wochen Rekordhöhen erklommen hatte. Von diesem Wertzuwachs möchte die Regierung einen Teil abgreifen. Der ohnehin geringen Binneninvestition im Land dürfte sie aber einen Bärendienst erwiesen haben.

### Höheres Staatsdefizit

Jaitley betonte die guten Wachstumsaussichten für die indische Wirtschaft. Nach dem Einbruch infolge der missglückten Grossreformen hoffe man für die zweite Hälfte des laufenden Finanzjahres auf eine Expansion um 7,2–7,5%. Für das kommende Jahr prognostiziert der internationale Währungsfonds ein Wachstum von 7,4%. Dennoch machen sich die Mehrausgaben bemerkbar. Wie erwartet, musste die indische Regierung ihre Defizitziele etwas lockern. Für dieses Finanzjahr wird mit einem Kostenüberschuss von 3,5% statt der geplanten 3,2% gerechnet, für 2018/19 mit 3,3 statt 3%. Dies senkt die Wahrscheinlichkeit weiterer Zinssenkungen durch die Zentralbank. Einige Beobachter rechnen sogar damit, dass es erstmals seit 3 Jahren wieder zu einer Erhöhung des Leitzinses kommen könnte.

# Daimler-Chef verurteilt Affenversuche

*Rekordjahr beschert Mitarbeitern 5700 Euro Prämie*

cei. Berlin · Es rächt sich, dass die deutschen Autobauer nicht jeden Stein umgedreht haben, um den Dieselskandal ein für alle Mal aufzuarbeiten. In den letzten Monaten hat sich laut Daimler-Chef Dieter Zetsche der Anteil der Dieselfahrzeuge am Absatz von Mercedes-Benz nämlich stabilisiert. Die Meldung über zweifelhafte Affenversuche, die von VW, Daimler und BMW finanziert wurden, werde aber natürlich negativ wirken, räumte Zetsche an der Bilanzpressekonferenz in Stuttgart ein. Daimler verabscheue solche Tests. Der Autobauer hatte am Mittwoch den zuständigen Mitarbeiter beurlaubt.

Die Dieseltechnologie steht auch wegen drohender Fahrverbote in gewissen Städten unter Druck. Die Autoindustrie hat eine Modifizierung der Software angeboten, um die Reinigung von Stickoxiden zu verbessern. Gegen eine Anpassung auch der Hardware wehrte sich Zetsche. Es würde zwei bis drei Jahre dauern, bis man überhaupt mit der Umrüstung beginnen könne, argumentierte er. Und es sei unvermeidlich, dass danach der Verbrauch – und damit die $CO_2$-Emissionen – der Fahrzeuge zu-, die Leistung aber abnehme.

Deutlich wurde, dass Elektroautos keineswegs die Lösung aller Probleme sind, selbst wenn der Strom einmal nur aus erneuerbaren Quellen stammt. Im Vordergrund steht das Abfallproblem hinsichtlich alter Batterien. Als Zwischenlösung liessen sie sich als Stromspeicher nutzen, sagte Zetsche. Daimler will bis 2022 für jedes Modell vom Kompakt- bis zum Geländewagen eine Elektrovariante anbieten. Der Konzern investiert deshalb in die Entwicklung und in Fabriken über die nächsten beiden Jahre im Schnitt 900 Mio. € mehr als 2017.

Dies geschieht nach einem neuerlichen Rekordjahr aus einer Position der Stärke heraus. Die gute Entwicklung wird im mittelfristigen Vergleich besonders deutlich: So kletterte der Umsatz von 2013 bis 2017 von 118 Mrd. auf 164 Mrd. €, der operative Gewinn (Ebit) von 10,8 Mrd. auf 14,7 Mrd. €. Die Aktionäre können sich über eine Dividende von € 3.65 je Aktie freuen – über vier Jahre ist sie um 62% gestiegen. Und die 130 000 Tarifangestellten in Deutschland erhalten eine Rekordprämie von 5700 €. Allerdings hält dies die Industriegewerkschaft Metall nicht davon ab, im gegenwärtigen Tarifkonflikt auch Daimler zuzusetzen. Schon ein Tagesstreik tut dem Konzern weh: Die Kapazitäten sind voll ausgelastet, womit man Produktionsausfälle kaum aufholen kann.

2:30 Beitrag vom 02.02.2018

# Kopter will bis zu 1000 Arbeitsplätze in Mollis schaffen

Beitrag in Merkliste speichern

Die erste Schweizer Helikopterfirma hat am Donnerstag ihren grossen Tag gefeiert. Dabei war der Namenswechsel von Marenco zu Kopter nicht der einzige Meilenstein.

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INSERAT

REGION

# Marenco-Heli wird zum Kopter

**Der Molliser Helikopterbauer ändert seinen Namen und sein Erscheinungsbild.** Unter dem Namen «Kopter» will CEO Andreas Löwenstein nichts weniger als den Weltmarkt erobern. SEITE 3

LEBEN

**«El Chapo»:** Einst war er ein mächtiger Drogenboss, nun ist er ein depressiver Häftling. SEITE 20

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Bilder Sasi Subramaniam, Keystone

**Wetter heute**
Kanton Glarus

**–1°/2°**
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# Stadtglarner tappen für eine Stunde im Dunkeln

Am Mittwoch gegen 18 Uhr sind für rund eine Stunde in Teilen von Glarus die Strassenlampen ausgefallen. Ein technischer Fehler bei der Steuerung der öffentlichen Beleuchtung war der Grund für die Dunkelheit.

**von Paul Hösli**

Zappenduster war es in einigen Teilen der Strassen von Glarus am Mittwoch von rund 18 bis 19 Uhr. Die Taschenlampe des Smartphones musste für manchen den Weg weisen, zum Auto etwa. Der Grund für den Ausfall der Strassenlampen ist laut Martin Zopfi folgender: «Ein Fehler auf der Steuerung der öffentlichen Beleuchtung. Ein Sensor war defekt, der die Dämmerung registriert und die Lampen automatisch aktiviert.» Daher wurden einige Strassenlampen nicht eingeschaltet. «Uns fiel auf, dass es aufgrund der Dämmerung Zeit für die Beleuchtung wäre. Da sieht man wieder einmal, wie wichtig diese ist.» Der Pikettdienst konnte die Störung in weniger als einer Stunde beheben. «Es war eine kleine Ursache mit bemerkenswerter Wirkung», so der Geschäftsführer der Technischen Betriebe Glarus.

### Ist selten der Fall

Es fiel auch nicht die ganze öffentliche Beleuchtung im Hauptort aus. Einige Strassenlampen funktionierten tadellos. «Für die Beleuchtung sorgen zwei Anlagen, daher waren nicht alle Ortsteile von Glarus betroffen», erklärt Martin Zopfi.

Es werde Licht: Der technische Dienst der TB Glarus konnte die Störung schnell beheben. Pressebild

«Eine solche Störung kommt selten vor, im Schnitt einmal pro Jahr.» Das letzte Mal sei es laut Zopfi im Herbst des letzten Jahres der Fall gewesen. «Falls es nun in kürzester Zeit wieder passieren sollte oder sich die Ausfälle mehren würden, müssten wir das Problem sicher näher analysieren.» Unfälle wurden in dieser Zeit keine registriert, und die Stadtglarner bewahrten auch sonst ihre Ruhe. «Unser Pikettdienst bekam zwei oder drei Meldungen, mehr aber auch nicht», weiss Martin Zopfi.

INSERAT

# Die Helibauer gehen in die Produktion

Gestern haben die Molliser Helibauer ihren neuen Namen «Kopter» gefeiert und den Beginn der Produktion im nächsten Jahr angekündigt. Man strotzt vor Selbstvertrauen und will Weltmarktführer werden.

**von Daniel Fischli**

Man spricht Englisch an der grossen Feierstunde des Helibauers Marenco, respektive neu Kopter. Aber eine Passage gibt es auf Deutsch, extra «für die lokalen Medien»: In Mollis würden in Zukunft pro Jahr rund 50 Helikopter gebaut, sagt Jan Nowacki von der Unternehmensleitung. Und wenn man pro Heli fünf Testflüge vor der Auslieferung rechne, komme man auf nur 250 Flüge. Verglichen mit den geplanten 18 000 Flugbewegungen ab dem Flugplatz Mollis sei das ein Nichts, so die Botschaft an das Glarner Publikum.

Im Übrigen waren die Adressaten des Anlasses von gestern in Wetzikon und Mollis Vertreter von Behörden, Investoren, Zulieferern und vor allem potenziellen Kunden. Die Leute von Kopter wollten zeigen, dass es vorangeht mit ihrem Produkt. Denn zuletzt hatte im Herbst die Meldung, das Unternehmen brauche noch einmal eine Finanzspritze von 150 Millionen Franken, für Schlagzeilen gesorgt.

### Die Ingenieure in Wetzikon

Rund 200 Gäste haben sich gestern Vormittag in den neuen Geschäftsräumen von Noch-Marenco in Wetzikon eingefunden. Mitten in einer ehemaligen Industriehalle steht der Prototyp 1, darum herum die Computer-Arbeitsplätze der Ingenieure. Man ist von Pfäffikon, wo man Tür an Tür mit dem ehemaligen Chef Martin Stucki arbeiten musste, nach Wetzikon umgezogen. Stucki war beim russischen Investor Alexander Mamut vor einem Jahr in Ungnade gefallen.

Die Ingenieure sind Männer um die 30 in Jeans und Hemd. Die grauhaarigen Männer mit Anzug und Krawatte sind vom Management oder Gäste. Stuckis Nachfolger Andreas Löwenstein kündigt ohne viel Pomp einen «big moment» an: Auf der Leinwand erscheinen auf schwarzem Grund ein aus stilisierten Rotorblättern gebildetes Schweizerkreuz und der Schriftzug «kopter» mit kleinem K. Der Namenswechsel soll den Übergang von der Entwicklung zur Produktion markieren. Im nächsten Jahr wolle man die ersten Hubschrauber an die Kunden ausliefern und dann innerhalb von zehn Jahren zum weltweit führenden Hersteller von zivilen Helikoptern werden, erklärt CEO Löwenstein. Sein Produkt sei ein «flying swiss pocketknive», also ein fliegendes Taschenmesser.

### Die Arbeiter in Mollis

Am Nachmittag geht es in Mollis weiter. In der zukünftigen Fertigungshalle durchschneidet der CEO ein rotes Band. Mit dabei sind André Borschberg, der mit Bertrand Piccard die erste Weltumrundung im Solarflugzeug geschafft hat, Regierungsrätin Marianne Lienhard, Marina Grönberg, die Vertreterin des Investors, Gemeindepräsident Martin Laupper und Philippe Harache, Präsident des Verwaltungsrates. Prototyp 2 steht rot-weiss im Hintergrund. Noch in diesem Jahr sollen Nummer 3 und 4 fliegen und in einem Jahr die Zulassung geschafft sein.

Das rote Band: CEO Andreas Löwenstein (ganz rechts) weiht mit seinen Gästen in Mollis die neue Produktionshalle ein.
Bilder Sasi Subramaniam

# «Ein Name, der in der ganzen Welt verstanden wird»

Kopter-CEO Andreas Löwenstein erklärt den neuen Firmennamen. Er rechnet mit 800 Arbeitsplätzen in Mollis – falls im Nutzungsplan der Gemeinde noch rechtzeitig Bauland ausgeschieden wird.

**mit Andreas Löwenstein sprach Daniel Fischli**

**Herr Löwenstein, Sie haben heute bekannt gegeben, dass aus «Marenco» neu «Kopter» wird. Weshalb dieser Namenswechsel?**
**ANDREAS LÖWENSTEIN:** «Marenco Swisshelicopter» war eine Engineering-Firma, und wir sind heute dabei, einen grossen Schritt zu machen in Richtung eines Hubschrauber-Herstellers. Wir wollten diesen Schritt markieren.

**Was wollen Sie mit dem Namen «Kopter» zum Ausdruck bringen?**
Wir wollten einen Namen haben, der in der ganzen Welt verstanden wird, der sofort für ein chinesisches Kind, für einen argentinischen Blumenverkäufer oder für einen nordamerikanischen Cowboy «Hubschrauber» bedeutet. Das war mit «Marenco Swisshelicopter» nicht der Fall. Weiter: Der Name ist kurz und prägnant, das soll Dynamik und Präzision ausdrücken, die Werte, die wir in der Schweiz hochhalten.

**Sie haben heute viele Vertreter von Behörden, von Lieferanten und Kunden eingeladen. Was ist ausser dem Namen neu?**
Wir haben hier über 200 Personen, darunter viele Kunden. Wir haben heute 46 Maschinen fest unter Vertrag, was uns erlaubt, ganz zuversichtlich in die Zukunft zu sehen. Wichtig war heute nicht nur der Namenswechsel, sondern auch die Einweihung von zwei neuen Gebäuden in Wetzikon und Mollis.

**Soll der Namenswechsel auch Distanz zum früheren CEO ausdrücken? In «Marenco» steckt der Name von Martin Stucki.**
Nein, wir schauen stolz in die Vergangenheit, wir haben keinen Grund, den Namen von Martin Stucki auszuwischen.

«Wir haben Kaufverträge in den USA, in Lateinamerika, und in Asien.»

**Sie haben die 46 Bestellungen erwähnt. Wie viele davon sind feste Bestellungen?**
Es sind 27 Maschinen fest und mit Anzahlung bestellt. Wir haben dazu 19 Vorverträge, die auch mit Anzahlungen verbunden sind und die mit der Typenzertifizierung, die wir im ersten Quartal des nächsten Jahres erreichen wollen, automatisch in Kraft treten. Zusätzlich haben wir 120 Kaufzusagen und wir denken, dass der grösste Teil davon in feste Verträge umgesetzt werden kann. Diese Verträge decken heute schon eine globale Präsenz von Kopter ab. Das heisst, wir haben feste Verträge in den USA, in Lateinamerika, in Asien und in Europa.

**Sie wollen ab 2019 ausliefern. Wie viele Helikopter können Sie dann pro Jahr bauen?**
Wir werden langsam und vorsichtig anfangen. Hubschrauber kann man nicht wie Autos herstellen. Im ersten Jahr werden wir fünf oder sechs Maschinen liefern. Das Wichtigste für uns ist, dass diese Maschinen sicher in den Flugbetrieb kommen. Dementsprechend haben wir unsere Kunden sehr gut ausgesucht. Danach werden wir in zweistellige Produktionszahlen gehen und wir denken, dass wir nach fünf, sechs Jahren sogar auf dreistellige Zahlen kommen.

**Kann man in Mollis so viele Hubschrauber bauen?**
In Mollis kann man unbegrenzt Hubschrauber herstellen, aber die Frage ist, ob das sinnvoll ist. Unser Ziel ist, dass wir in der Schweiz sensible Komponenten wie Rotorblätter oder Getriebe für die ganze Welt bauen. Die Endfertigung werden wir nahe am Kunden haben. Das heisst, wir werden aus der Schweiz den europäischen Markt abdecken und werden in den USA und in Asien weitere Endfertigungsstätten aufstellen.

**Bleibt Mollis einer der Endfertigungsstandorte?**
Mollis wird das Herz unseres Industrieaufbaus sein.

**Mit wie vielen Arbeitsplätzen rechnen Sie für Mollis?**
Wenn wir auf die Stückzahlen kommen, die wir uns vorstellen, werden wir sicher über 400 Arbeitsplätze schaffen. Gleichzeitig gibt es um den Hubschrauber herum viele Zulieferer, die sich hier ansiedeln. Wir gehen davon aus, dass so noch einmal über 400 Arbeitsplätze dazukommen.

**Probleme dürfte Ihnen der Nutzungsplan der Gemeinde machen. Im Moment verhindert er ihre Ausbreitung in der Fläche.**
Es ist für uns eine Voraussetzung, dass wir hier unsere Produktionsstätte ausweiten können. Wenn wir die Flächen nicht erstellen können, haben wir ein Problem. Das kann am Ende den Standort hier infrage stellen. Wir gehen aber davon aus, dass wir das Problem lösen können.

**Bis wann brauchen Sie einen Beschluss der Gemeinde?**
Es wird noch in diesem Jahr in den Gesprächen mit der Gemeinde und dem Kanton vorangehen müssen. Im nächsten Jahr wollen wir mit dem Bau anfangen. Wir können nicht von den Bauten her limitiert sein, sonst kommen wir nicht zu unserem Markteintritt.

«Wir brauchen im nächsten Jahr eine Baugenehmigung.»

**Sie brauchen also in diesem Jahr einen Entscheid?**
Wir brauchen in diesem Jahr eine Zusage und im nächsten die Genehmigungen, damit wir dann mit dem Bau anfangen können.

**Im Herbst ist die Meldung durch die Medien gegangen, dass sie noch 150 Millionen Franken Kapital brauchen. Haben Sie dieses Geld beieinander?**
Ein solcher Prozess braucht seine Zeit. Wir sind in Gesprächen mit verschiedenen Investoren. Unser bisheriger Investor bleibt natürlich, aber die Frage war, ob wir in einer Position sind, auch weitere Investoren anzuziehen. Das ist in der Tat der Fall. Wir haben sehr interessante Gespräche mit Investoren, die gerne hier einsteigen wollen.

**Sie sind also zuversichtlich?**
Ich bin zuversichtlich und gehe davon aus, dass wir vor Ende Jahr eine Kapitalerweiterung haben werden.

AEROBUZZ.FR

# Vers la certification du Kopter tueur d'Ecureuil

KOPTER - MARENCO - SH90

HÉLICOPTÈRE Publié le 1 mars 2018 par Thierry Dubois

*Le constructeur Marenco Swisshelicopter s'est récemment renommé Kopter, un changement emblématique d'une évolution profonde de l'entreprise. Les nouveaux dirigeants, des professionnels chevronnés, veulent faire profiter le projet de leur expérience. Au risque de l'excès de confiance ? Face à l'Ecureuil d'Airbus Helicopters, le monoturbine SH09 est particulièrement bien pensé mais le défi organisationnel est de taille.*

Avec deux grandes portes arrière, la cabine du SH09 se veut très accessible afin de concurrencer le H135 et le H145 en Samu héliporté. © Kopter

L'hégémonie de la famille Ecureuil sur le segment des monoturbines de 6 à 8 places est-elle menacée ? Les modèles H125 et H130 d'Airbus Helicopters ont déjà face à eux, dans les campagnes de vente, un concurrent plus moderne. Le SH09, conçu par l'entreprise suisse Kopter (ex-Marenco Swisshelicopter), est encore en phase de mise au point mais il a déjà convaincu des clients.
De fait, il profite des dernières avancées technologiques. Sa position mercatique est intelligemment trouvée. Il bénéficie du soutien sans faille d'un actionnaire unique – un fonds d'investissement créé par le milliardaire russe Alexander Mamut.

Certifier un nouvel hélicoptère est un défi de taille... encore davantage pour une jeune entreprise. © Kopter

Mais, après de nombreux retards, le jeune constructeur doit prouver qu'il est capable de faire homologuer son premier produit. Et ce ne sera qu'une étape : il faudra encore fabriquer en série et assurer le service après-vente. L'équipe dirigeante, renouvelée et désormais essentiellement constituée d'anciens d'Airbus Helicopters et de Leonardo (ex-AgustaWestland) est très optimiste. Trop ?

## Matériaux composites et redondances

Elle se fonde en tous cas sur une conception très convaincante. La structure fait largement appel aux matériaux composites. La cellule est donc plus légère. Les ingénieurs de Kopter visent une masse à vide de 1400 kg et ainsi un ratio très favorable avec la charge offerte de 1250 kg.
L'importante surface vitrée est faite pour donner aux passagers une visibilité maximale. Sous les pieds du pilote, le plancher transparent offre plus de sécurité lors de l'atterrissage. Un avantage aussi en travail à l'élingue.

Les grandes surfaces vitrées du SH09 en font un sérieux candidat pour le transport touristique et le travail aérien. © Kopter

Côté systèmes, un double circuit hydraulique offre un niveau élevé de redondance. Si l'un des deux circuits tombe en panne, l'hélicoptère conserve le même domaine de vol, soulignent ses concepteurs. Nul besoin d'atterrir d'urgence. Le pilote peut se rendre jusqu'à un héliport où il pourra faire réparer. Le moteur Honeywell HTS900 est récent – il avait créé pour un programme militaire américain qui n'a finalement pas vu le jour – et possède une régulation numérique Fadec à pleine autorité et redondante. Le SH09 a débuté avec une avionique Safran Electronics & Defense (ex-Sagem). L'annonce du nom d'un nouveau fournisseur est attendue cette semaine au salon Heli-Expo.

## Agrément AESA pour la conception

Le défi organisationnel est au moins aussi important que son pendant technique. Et un grand pas vient d'être fait. Le 21 février, Kopter a reçu de l'Agence européenne de la sécurité aérienne (AESA) son agrément en tant qu'organisme de conception. Ce précieux sésame, le DOA, « atteste que Kopter a « réuni du personnel qualifié, mis en œuvre les méthodes nécessaires et possède un système d'assurance conception, » explique l'entreprise. Elle est la première, dans sa catégorie d'hélicoptériste, à recevoir un DOA depuis la création de l'AESA il y a quinze ans.

## ex-Airbus, ex-Leonardo…

Les noms d'Andreas Loewenstein, Philippe Harache, Christian Gras, Jan Nowacki, Cécile Vion-Lanctuit, Michele Riccobono… disent peut-être quelque chose à nos lecteurs. Et pour cause ! Ce sont d'anciens cadres dirigeants de d'Airbus (époque Eurocopter) et de Leonardo, passés chez Kopter.

Andreas Loewenstein, le directeur général, est l'ancien directeur de la stratégie d'Airbus Helicopters, époque Eurocopter. © Kopter

Le premier est le directeur général. Il a succédé début 2017 au fondateur et créateur du SH09, Martin Stucki. Ce dernier a été renvoyé à ses chères études. L'actionnaire voulait que Marenco Swisshelicopter – devenu Kopter il y a quatre semaines – passe d'une culture de laboratoire à une culture d'entreprise. Andreas Loewenstein a notamment occupé le poste de directeur de la stratégie et du développement chez Eurocopter.

Michele Riccobono, le directeur technique, est un ancien ingénieur d'essai en vol de Leonardo. Son expérience a immédiatement été mise à profit lors de son arrivée, il y a quelques mois. « J'ai constaté que les ingénieurs butaient sur un problème simple de télémesure », raconte-t-il. Problème rapidement résolu grâce à sa longue habitude des essais.

Le mélange des idées nouvelles portées par de nouveaux venus dans le domaine de l'hélicoptère et de l'expérience de professionnels chevronnés pourrait être très fructueux. Il peut aussi conduire les seconds à adopter une attitude trop confiante. On peut en tous cas s'interroger sur le volume prévu d'heures d'essais en vol.

## 420 heures de vol... seulement ?

Début février, le nombre d'heures restant à accomplir était estimé à 350, alors que les deux premiers prototypes n'avaient accumulé que 70 heures environ. Comparons avec un appareil actuellement développé par un hélicoptériste aux méthodes rodées. En novembre, le H160 d'Airbus était « à mi-parcours », selon ses promoteurs, à 550 heures de vol ! Mais le H160 est beaucoup plus complexe, souligne Andreas Loewenstein. Avec Michele Riccobono, il estime que les ingénieurs de Kopter sont très polyvalents.

A Mollis, en Suisse, les essais en vol du deuxième prototype se poursuivent.© Kopter

Il juge Kopter capable de prendre des décisions « *en une heure au lieu d'un mois dans une grande firme* ». L'organisation est efficace et occasionne peu de frais généraux. D'où des besoins réduits en financement. La mise au point du SH09 devrait ainsi coûter « un quart à un tiers » de ce qu'un grand constructeur aurait dépensé, avance le directeur général.

La certification AESA devrait intervenir entre février et avril 2019, selon les dernières prévisions de Kopter. La première livraison suivrait au second semestre. Grâce aux commandes et intentions d'achat annoncées au salon Heli-Expo, Kopter dit avoir atteint 189 ventes.

Prix annoncé : 3,3 M$, soit un niveau similaire au H130, indique Christian Gras, directeur en charge des clients. Les clients de lancement seront européens – notamment suisses – mais la proportion de ventes réalisées aux Etats-Unis est de 45 %, conforme au marché mondial des monoturbines.

## Aux Etats-Unis, vols médicalisés et touristiques

Christian Gras vise en particulier le marché américain du Samu héliporté. La grande et très accessible cabine du SH09 rivalise avec celles du H135 et du H145. Sa configuration monomoteur lui permet de proposer des vols moins chers, alors que la pression sur les coûts est forte sur ces exploitants aux Etats-Unis, avance Christian Gras.

La cellule fait largement appel aux matériaux composites. © Thierry Dubois / Aerobuzz.fr

Autre cible américaine : les vols touristiques. Une vague de remplacement des H130 actuels est attendue. Or Kopter estime pouvoir loger un passager de plus dans le SH09 (huit au lieu de sept). Avec une vitesse de croisière plus élevée, la productivité sera donc supérieure, promet le directeur clients. Andreas Loewenstein voit Kopter figurer parmi les trois premiers constructeurs mondiaux dans dix ans. S'il gagne son ambitieux pari, il aura à son actif un salutaire renouvellement.

**Thierry Dubois**

## A propos de Thierry Dubois

Thierry Dubois est journaliste aéronautique depuis 1997. Ingénieur Enseeiht, il s'est spécialisé dans la technologie – moteurs, matériaux, systèmes, etc. Il collabore régulièrement à plusieurs publications françaises et américaines. Il a rejoint Aerobuzz, en octobre 2009. Thierry Dubois, couvre notamment les hélicoptères civils et l'aviation d'affaires, ainsi que tous les sujets techniques.