

Heavy-lift helicopter for the Bundeswehr

- **Delivery of first simulator for pilot training further milestone in the introduction of the CH-53K in the US Marine Corps**
- **Rheinmetall responsible for simulation and training in Germany**
- **German industry team ideally positioned for seamless introduction of the CH-53K**

Berlin, June 19th, 2020 – Another important milestone was reached with the introduction of the Sikorsky CH-53K "King Stallion" in the US: Lockheed Martin has handed over the first simulator to the US Marine Corps (USMC). With the help of state-of-the-art technology, the helicopter's crews are now being prepared for mission deployment in a realistic environment.

The flight simulator contains a fully-fledged cockpit environment for the two pilots, a monitoring station for the training personnel and a room for training preparation and follow-up. It is also capable of simulating a wide range of environmental conditions and mission scenarios. The simulator thus enables the crews to train the full range of capabilities of the CH-53K - such as flights with external loads and flights under restricted visibility conditions.

This development is also of great interest to the Bundeswehr. In Germany, Sikorsky is participating with the CH-53K in the current tender for the new heavy transport helicopter. To this end, the company set up a German core team already at an early stage, comprising the renowned companies Rheinmetall, MTU Aero Engines, Autoflug and Hydro Systems. "We are pleased to partner with the German industry team to offer the CH-53K heavy-lift helicopter to the Bundeswehr," said Beth Parcella, CH-53K International Business Development Director at Sikorsky. "Our close and already well-established industry partnership is key to the program's success, and we are confident that the CH-53K will create substantial value in Germany." At Sikorsky's US production site in Stratford, Connecticut, 31 machines are currently in production. At the time of the first delivery to the Bundeswehr, the USMC is expected to have 70 CH-53K in service.

Rheinmetall responsible for simulation and training in the German CH-53K team

In Germany, Rheinmetall will be responsible for manufacturing and operating the CH-53K simulators. With over 40 years of experience in simulation and training systems, Rheinmetall is the ideal partner for providing these training solutions. The company already offers computer-supported, tailor-made training programs for a variety of platforms, including the NH90 transport helicopter, the Tiger combat helicopter, the Eurofighter combat aircraft and the A400M transport aircraft. "High-quality simulators enable the training of situations that cannot be practiced in reality or only at great expense. The simulators thus ensure the operational readiness of the flying units and save both material and budget," said Mike Schmidt, Managing Director of Rheinmetall Aviation Services GmbH. In addition, Rheinmetall is responsible for operating the crew training centers as well as the actual training itself, thus providing all the training the Bundeswehr needs to operate the CH-53K safely and effectively.

It is not only in the field of simulation and training systems that Rheinmetall maintains strong relations with the German armed forces. With the technical and logistic support of the CH-53G provided by Rheinmetall Technical Publication GmbH, an approved aeronautical engineering company of the Bundeswehr, the company is also already involved in the maintenance of the existing transport helicopter fleet. Drawing on this experience, Rheinmetall will be providing essential services such as maintenance, repair, training and program support for the CH-53K in Germany and will act as the Bundeswehr's main point of contact. The other renowned partners of the German industry team also have long-standing, trusting relationships with the Bundeswehr and have been familiar with the requirements and procedures of the armed forces for several decades.

Team convinces through experience and long-term cooperation with the Bundeswehr

MTU Aero Engines, too, can point to long-standing relations with the Bundeswehr. MTU is already responsible for the maintenance of the T64 engines of the existing CH-53G fleet. In the current project, MTU has developed the CH-53K engine in cooperation with General Electric and is responsible for an 18-percent share of the project. MTU has development and manufacturing responsibility for the power turbine and the associated repair instructions and devices.

"MTU stands for reliability in long-term partnerships," says Wolfgang Gärtner, program manager for helicopter engines at MTU Aero Engines. "For the T408, the CH-53K's newly developed engine, we're program partners with GE Aviation. The resulting know-how and innovative repair techniques developed in-house are the basis for our close cooperation with the military customer. For decades, we have been cooperating successfully with the German Armed Forces in engine maintenance for many programs. Soldiers and MTU mechanics work side by side on maintenance and repair work. This ensures the technical competence of the soldiers and maintains the Bundeswehr's ability to assess engine technology."

Autoflug has maintained a close relationship with the armed forces since the founding of the Bundeswehr in 1955 and took over the maintenance of important rescue systems such as the ejector seats of the Luftwaffe's combat aircraft at an early stage. Since 2007, this has been carried out within the framework of a particularly close cooperation with the Bundeswehr, which, in addition to the maintenance of the ejection seat system, also includes the packing of the rescue parachutes and the support of the brake parachutes for the Eurofighter. Autoflug is already developing and manufacturing safety seats for the CH-53G currently being flown in Germany, in particular to improve safety in the event of a crash for the remaining duration of the mission. The seat systems also have a low dead weight, can be fitted and removed extremely quickly, are robust and maintenance-free and offer the occupants maximum freedom of movement. All these requirements will also apply to the successor in the same or a similar way, so that an adaptation to the CH-53K was considered from the very beginning of development.

In addition, there are concrete considerations for the integration of further Autoflug components in the cabin interior. In addition to extensive stowage solutions, these include MedEvac equipment in the form of stretcher systems and modules for intensive medical care of the wounded during transport. The topic of increasing range by means of additional tank systems has also already been considered. Autoflug considers it particularly important that, in the end, the soldiers receive the best possible solution in terms of mission-specific equipment, flexibility of use, effective maintenance and repair, and the highest possible level of safety. "The expansion of the possible added value in Germany, which we have been striving for from the very beginning, offers us and other companies in the defence industry in our country the opportunity to sustainably contribute our capabilities, maintain and further expand capacities", says Alexander Bode, VP Sales at Autoflug. "In addition to the economic component, this also represents an important signal to the German industry concerned."

Hydro, with its approximately 750 employees worldwide, has been working with the German armed forces for many years. The medium-sized company supplies, for example, tools for maintenance of the current CH-53G transport helicopter. The industrial tools can be found in almost every Bundeswehr hangar and in the operational areas, but also in use on every civil aircraft. A well-rehearsed team, familiar contact persons, procedures and processes are established. In the view of Managing Director Thomas Elsner, the proven cooperation is a great advantage for the Bundeswehr: "High-quality maintenance tools are indispensable for the reliability of transport helicopters. As the market leader, our equipment ensures the Bundeswehr's operational capability."

Within the scope of the programme, Hydro will primarily be responsible for the ground equipment for the CH-53K (triple jacks, wheel change jacks and tow bars), the development and maintenance of manufacturer-specific tools as well as the documentation and training for the corresponding equipment. Above all, the Hydro site in Biberach/Baden will play an important role in the planned value creation in Germany. Here, tools will be manufactured in accordance with European CE guidelines.

CH-53K exceeds standard requirements

The combined know-how of the industry team means that the CH-53K, as the most modern, intelligent and powerful heavy-lift helicopter on the market, already exceeds many of the minimum performance levels specified in the tender as standard and with a significant performance advantage. Thanks to advanced technology such as the "Health & Monitoring System", the CH-53K requires less maintenance and will be able to significantly exceed the specified availability rate of at least 70 percent.

In addition, the CH-53K offers several capabilities that – while not being part of the tender and therefore not being included in the evaluation catalogue – will provide the Bundeswehr with considerable added value. For example, the rotor folding system developed by Sikorsky guarantees space-saving accommodation and uncomplicated transport of the CH-53K. The existing CH-53 fleet also possesses this capability. In addition to operational advantages for the Bundeswehr, this

capability also offers a considerable cost advantage: infrastructures at the STH operating sites would not have to be adapted at great expense.

The CH-53K also has decisive capabilities in civil disaster control. For example, the helicopter can transport up to 12,000 liters of water per fire-fighting attack - more than four times the amount of water than its predecessor in the same time. The past hot summers have shown that climate change is also causing a significant increase in forest fires in Germany.

Background:

In Germany, negotiations with the Federal Office for Equipment, Information Technology and Utilisation of the German Armed Forces (BAAINBw) began at the beginning of the month following the submission of the bid in January. The invitation to submit the final offers (Best and Final Offer) is expected at the end of the year. The final decision on the award of the contract for the new transport helicopter is expected to be taken in early 2021. The first delivery of the aircraft could take place from 2024 onwards, as requested, to ensure a seamless transition from the current CH-53G fleet, train the relevant personnel and establish the logistical basis for operations in Germany.

For this project, US helicopter manufacturer Sikorsky and German technology group Rheinmetall formed a core team early on, including renowned German industrial companies MTU Aero Engines, Autoflug GmbH and Hydro Systems KG. The extended team includes Hensoldt, Rohde&Schwarz, Vincorion, ZF Luftfahrt, Collins Aerospace and others.

In the event of a successful application, Sikorsky and Rheinmetall intend to set up a logistics centre and an STH fleet support centre at Leipzig/Halle Airport. As the two companies announced at the end of October 2019, they are in advanced talks with representatives of the state government, the companies already based there and the airport operator.

Due to its versatility, the CH-53K can be used for tactical transport of personnel and material, humanitarian missions, medical evacuation or armed search and rescue missions (CSAR) as well as in disaster control. The heavy transport helicopter is particularly suitable for the increasingly important aerial fire-fighting operations, as no other available helicopter is able to transport more fire-fighting water, material and personnel to operational areas.

The CH-53K's cargo bay design also makes it capable of carrying the same airlift pallets as the C-130J and A400M, thus enabling rapid cargo handling. This means that the helicopter can be used in places where these transport aircraft cannot land due to their size.

Considering the life cycle costs as well as mission requirements and capabilities, the CH-53K delivers the significantly better long-term value compared to other transport helicopters. The avionics and the digitalized flight control system offer growth potential for the integration of further systems and also the payload capability can be increased considerably with relatively simple modifications. An integrated sensor and diagnostic system enables the helicopter to detect and isolate problems at an early stage, which drastically simplifies maintenance and is crucial for high availability and efficient operation of the entire fleet.

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ABOUT LOCKHEED MARTIN

Lockheed Martin is a global security and aerospace company based in Bethesda, Maryland (USA), employing approximately 110,000 people worldwide. The company is primarily engaged in the research, development, manufacture, integration and maintenance of advanced technological systems, products and services. Further information is available at <http://www.lockheedmartin.com/de>.

ABOUT RHEINMETALL

Listed Rheinmetall AG, headquartered in Düsseldorf, Germany, is a global technology group focusing on the future of security and mobility. With a workforce of around 23,000, the Group's two sectors Automotive and Defence generate annual sales in excess of EUR 6 billion. The company has a global presence with over 120 locations and production plants. As a leading European systems supplier for defence and security technology, Rheinmetall Defence stands for many years of experience and innovation in armoured and logistic vehicles, weapons and ammunition as well as in the fields of air defence, electronics and simulation. As an aviation-certified company, Rheinmetall Aviation Services intends to provide key services such as maintenance, repair, training and program support for the German armed forces in the field of heavy transport helicopters.

ABOUT THE GERMAN CH-53K TEAM

Sikorsky formed a German industry team at an early stage and ensured that the expertise of the local partners flowed directly into the application. A large part of the added value of the project will therefore be established in Germany. The German CH-53K team will be led by Rheinmetall. Other Sikorsky team members include Autoflug, Collins Aerospace, Hensoldt, HYDRO Systems, MTU Aero Engines, Rohde & Schwarz, Vincorion and ZFL. The German-American CH-53K team is the basic prerequisite for a successful STH program and ensures high availability of the helicopter as well as reliable support and maintenance - throughout the entire service life of the helicopter.

Bildmaterial

[*Pictures of US simulator*](#)

The STH-Team at “ILA goes Digital”

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#STH_Team #OnlyTheKCan

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