

## **Zivile und militärische Zukunftstriebwerke**

Für den Antrieb von Passagierflugzeugen wird es auf absehbare Zeit zur Gasturbine keine Alternative geben. Einerseits geht der Trend deshalb hin zu Triebwerken mit größeren Fans. Dies verbessert den Vortriebswirkungsgrad entscheidend. Andererseits werden Drücke und Temperaturen im Inneren der Triebwerke steigen. Das erhöht den Gesamtwirkungsgrad. Die MTU erarbeitet und entwickelt auch neue Werkstoffe, Beschichtungen und innovative Fertigungsverfahren.

Integrierte Antriebe, hocheffiziente Wärmekraftmaschinen, „Variable Cycle“-Ansätze, rekuperative Elemente, Kombiprozesse oder hybride Elemente versprechen weitere Verbesserungen. Darüber hinaus verfolgt die MTU auch zahlreiche neue technische Ansätze. Zu ihnen gehören beispielsweise elektrische Antriebssysteme und die Entwicklung alternativer Kraftstoffe.

Auch im militärischen Bereich wird sich der Trend zu höheren Drücken und Temperaturen fortsetzen. Deshalb sind neue Werkstoffe und Fertigungsverfahren auch hier der Wegbereiter für leistungsfähigere Triebwerke. Wegbereiter für die militärischen Technologieentwicklung könnte ein neues europäisches Kampfflugzeug sein. Derzeitige Planungen lassen seinen Einsatz ab 2040 erwarten. Als Kampfjet der nächsten Generation benötigt das Flugzeug einen entsprechend leistungsstarken Antrieb. Dazu zählen klassische Triebwerksparameter wie Robustheit und Zuverlässigkeit oder ein verbessertes Schub-Gewichtsverhältnis. Geringe Entwicklungs- und Herstellkosten, eine effiziente Instandhaltung sowie lange und planbare Wartungsintervalle sind weitere Eckpunkte. Das digitale Umfeld der Zukunft stellt zusätzliche hohe Anforderungen, etwa an die Integration der Radarsignatur-Aspekte und die elektrische Leistungsentnahme.

Die MTU bringt auch hierbei ihre umfassende Expertise ein. Als zuverlässiger Partner arbeitet sie nicht nur maßgeblich an nationalen und internationalen Studien mit, sondern möchte das neue Jet-Triebwerk in europäischer Zusammenarbeit realisieren.

Quelle:

MTU

## US Air Force Selects Boeing for A-10 Thunderbolt II Re-Winging Contract

*Eleven-year award builds on more than a decade of A-10 support*

Boeing (NYSE: BA) will continue its legacy of A-10 Thunderbolt II sustainment work under an Indefinite Delivery/Indefinite Quantity (IDIQ) contract award from the U.S. Air Force (USAF), with a maximum ceiling value of \$999 million.

Under the contract, which was competitively awarded, Boeing will be responsible for managing the production of a maximum of 112 wing sets and spare kits. The USAF ordered 27 wing sets immediately at contract award.

"Boeing is honored to be selected to continue as the A-10 Thunderbolt II wing kit contractor," said Pam Valdez, vice president of Air Force Services for Boeing Global Services. "Our established supply base, experience with the A-10 structures, and our in-depth knowledge of the U.S. Air Force's requirements will help us deliver high-quality wings to meet the customer's critical need."

Boeing will team with Korean Aerospace Industries and other key suppliers to deliver the first wing sets to Hill Air Force Base in Ogden, Utah.

Under a previous contract, Boeing delivered 173 enhanced wing assemblies.

Boeing is the world's largest aerospace company and leading provider of commercial airplanes, defense, space and security systems, and global services. As the top U.S. exporter, the company supports commercial and government customers in more than 150 countries. Boeing employs more than 150,000 people worldwide and leverages the talents of a global supplier base. Building on a legacy of aerospace leadership, Boeing continues to lead in technology and innovation, deliver for its customers and invest in its people and future growth.

Quelle:

Boeing Press Release 21 August 2019

## **Lockheed Martin Announces First Title-Sponsored Space And Air Show, U.S. Air Force Thunderbirds To Fly**

Lockheed Martin (NYSE: LMT) will serve as the title sponsor for the first-ever Lockheed Martin Space and Air Show, Oct. 31 to Nov. 1, 2020. It will be held at the Orlando Sanford International Airport, near downtown Orlando. The show will be headlined by the U.S. Air Force Thunderbirds, and it will feature numerous company air, ground and space assets.

Lockheed Martin has a 60-year history in central Florida, including executing programs in the Orlando, Tampa, and Space Coast areas. This work includes aviation, space exploration, missiles, fire control, and training and simulation programs. The company's regional workforce is growing and currently has hundreds of jobs available in central Florida to support recent contract wins.

"We look forward to giving visitors from central Florida and from across the nation a firsthand glimpse into the exciting technologies and capabilities we provide our military and our allies to help them protect lives and liberties around the world," said Marillyn Hewson, chairman, president and CEO, Lockheed Martin.

The space and air show is produced by B. Lilley Productions, an event management company specializing in the production of air shows. In 2020, they'll also produce events in New York, New York, Atlanta, Georgia, Fort Lauderdale, Florida, and Ocean City, Maryland.

"Our entire organization is extremely honored to work with Lockheed Martin in creating this signature North American aerospace event," said Bryan Lilley, chief executive officer, B. Lilley Productions. "Showcasing Lockheed Martin's vast portfolio brings together an unprecedented display of air, ground and space assets."

The Orlando Sanford International Airport serves three million passengers annually. It was opened in 1942 as a World War II fighter and bomber training base.

"With the Orlando area's first space and air show of the new millennium, we are excited to bring this unique thrill and excitement to central Florida," said Diane Crews, Orlando Sanford Airport CEO. "Lockheed Martin's reputation for excellence will propel the show to a national level. We can't wait!"

Tickets go on sale during Veterans' Day weekend in November 2019 with pricing announced then. The dedicated LMSAS website is [www.spaceandairshow.com](http://www.spaceandairshow.com).

Quelle:

Lockheed Martin Press Release 19 August 2019

## **Successful launch of the second SpaceDataHighway satellite on Ariane 5**

The EDRS-C satellite, the second node of the SpaceDataHighway network (also known as EDRS, European Data Relay System), has been successfully launched into geostationary orbit at 31° East by an Ariane 5 rocket from Kourou, French Guiana. After a test period, it will double transmission capacity of the system in order to serve two observation satellites simultaneously and provide redundant back-up for the SpaceDataHighway. This second satellite is joining EDRS-A which transmits on a daily basis the images of Earth acquired by the Copernicus programme's four Sentinel observation satellites. Since it entered service in late 2016, it has achieved more than 20,000 laser connections. The reliability rate has reached 99.5%, and these successful connections have downloaded more than 1 petabyte of data. Full operations including EDRS-C are expected by the end of 2019, when its inter-satellite link and end-to-end service will be tested and commissioned with the Sentinel satellites. The SpaceDataHighway is the world's first 'optical fibre' network in the sky based on cutting-edge laser technology. It is a unique network of geostationary satellites permanently fixed over a network of ground stations that can transmit data at a rate of 1.8 Gbit/s. It will be a key component of the Airbus Network for the Sky (NFTS) programme. NFTS combines various technologies - satellite and ground communications, air-to-ground, ground-to-air and air-to-air tactical links, 5G mobile communications and laser connections - in a resilient, unified, secure, highly interoperable, mesh network for aircraft, UAVs and helicopters. SpaceDataHighway satellites can connect to low-orbiting observation satellites at a distance up to 45000 km, intelligence UAVs or mission aircraft via laser. From its position in geostationary orbit, the SpaceDataHighway system relays data collected by observation satellites to Earth in near-real-time, a process that would normally take around 90 minutes. It thus enables the quantity of image and video data transmitted by observation satellites to be tripled and their mission plan to be reprogrammed at any time and in just a few minutes. "The SpaceDataHighway makes our data connections more secure, more stable, more reliable, with more bandwidth and in near real time. The launch of our second satellite is just the start, laser communication will be a revolution for many industries," said Evert Dudok, Head of Communications, Intelligence & Security at Airbus Defence and Space.

A third communication node is to be positioned over the Asia-Pacific region by around 2024. Equipped with three laser terminals, EDRS-D will significantly increase the system's communication capacity and considerably expand its coverage. From 2021, the Pleiades Neo Earth observation satellites will begin to use the SpaceDataHighway. By the end of 2019, the system will also provide a fully European broadband communication service to the Columbus module of the International Space Station (ISS). The SpaceDataHighway is a public-private partnership between the European Space Agency (ESA) and Airbus, with the laser terminals developed by Tesat-Spacecom and the DLR German Space Administration. Airbus owns, operates and provides commercial services for the SpaceDataHighway. The EDRS-C satellite platform supplied by OHB System AG is also carrying a payload for Avanti Communications.

Quelle:

Airbus Press Release 07 August 2019

## ZF reagiert auf schwieriges Marktumfeld

- *Technologiekonzern erzielt im ersten Halbjahr 2019 einen Umsatz von rund 18,4 Milliarden Euro*
- *Bereinigtes EBIT beträgt rund 650 Millionen Euro*
- *Maßnahmen zur Verbesserung der Ergebnisqualität eingeleitet*
- *Fokus der Investitionen liegt auf den strategischen Technologiefeldern autonomes Fahren und Elektromobilität*

*Friedrichshafen. Die ZF Friedrichshafen AG hat in den ersten sechs Monaten dieses Jahres einen Umsatz von rund 18,4 Milliarden Euro erzielt. Das bereinigte operative Ergebnis (EBIT) belief sich auf rund 650 Millionen Euro. Aufgrund der bisherigen Geschäftsentwicklung und des auch perspektivisch schwierigen weltwirtschaftlichen Umfelds hat das Unternehmen seine Umsatz- und Ergebniserwartungen für 2019 angepasst. ZF rechnet für das Gesamtjahr mit einem Umsatz zwischen 36 und 37 Milliarden Euro und einer bereinigten EBIT-Marge zwischen vier und fünf Prozent.*

„Die jüngst erhaltenen Großaufträge für unser hybridfähiges Pkw-Automatgetriebe und die nun beginnende Lieferung unseres Elektroantriebs für ein in Großserie gefertigtes Fahrzeug der Oberklasse zeigen, dass unsere Strategie und unser technologieoffener Ansatz richtig sind. Die Kunden vertrauen langfristig auf unsere Produkte und Technologien“, sagt der Vorsitzende des Vorstands der ZF Friedrichshafen AG, Wolf-Henning Scheider. „Von der derzeit schwierigen weltwirtschaftlichen Situation können aber auch wir uns nicht entkoppeln und liegen wegen der schrumpfenden Automobilmärkte deutlich unter unseren Planungen.“

Während sich der Markt für schwere Nutzfahrzeuge sowie das Industriegeschäft anfangs noch stabil gezeigt hat, haben die teils deutlich geringeren Pkw-Verkaufszahlen in allen großen Weltmärkten – besonders in China – im ersten Halbjahr 2019 das Umsatzwachstum von ZF gebremst. Das Unternehmen war zuvor von einer leicht positiven Entwicklung ausgegangen. Zur konjunkturellen Eintrübung kommen wirtschaftspolitische Faktoren wie die Ungewissheit um den bevorstehenden Brexit sowie Zoll- und Handelskonflikte hinzu, die belastend wirken. Unter Berücksichtigung der Wechselkurs- und M&A-Effekte ging der Umsatz von ZF organisch um rund minus 1,7 Prozent auf rund 18,4 Milliarden Euro zurück.

Mit 646 Millionen Euro blieb das bereinigte Ergebnis vor Zinsen und Steuern von ZF im ersten Halbjahr 2019 unterhalb des prognostizierten Korridors. Ursächlich dafür waren vor allem die genannten Volumentrübkänge im Pkw-Segment, eine weitere Steigerung der Aufwendungen für Forschung und Entwicklung sowie der Aufbau neuer Standorte insbesondere für Elektroantriebe und die damit verbundenen Anlaufkosten. „Dieser Betrag kann uns nicht zufriedenstellen. Wir steuern gegen, indem wir partiell unsere Kapazitäten anpassen. Zudem leiten wir weitere Maßnahmen ein, um die Ergebnisqualität wieder zu verbessern“, sagt ZF-Finanzvorstand Dr. Konstantin Sauer. „Gleichwohl wird ZF unverändert in zukunftsgerichtete Technologien wie Elektromobilität und autonomes Fahren investieren.“ Wo sich indes konjunkturell bedingte Rückgänge zeigten, werde das Unternehmen Investitionen in bestehende Geschäftsfelder zurückstellen oder reduzieren.

Zuversichtlich zeigt sich Sauer hinsichtlich der in Kürze anstehenden Finanzierung der Akquisition des Nutzfahrzeugbremsenherstellers Wabco. „Wir haben die Finanzierung

langfristig solide aufgesetzt. Potenzielle Investoren haben auf unsere Pläne positiv reagiert“, betont Sauer. ZF plant, zur Finanzierung der Akquisition einen Schuldschein zu begeben und einen Euro-Bond zu platzieren; das Unternehmen will damit im Spätsommer in die Märkte gehen.

Da ZF im zweiten Halbjahr keine durchgreifende Verbesserung der globalen Konjunktur erwartet, passt das Unternehmen seine Prognose für 2019 an. Für das Gesamtjahr rechnet ZF nun mit einem Konzernumsatz zwischen 36 und 37 Milliarden Euro, einer bereinigten EBIT-Marge von vier bis fünf Prozent sowie einem Free Cashflow zwischen einer halben und einer Milliarde Euro. Die Prognose basiert auf der Annahme einer konstanten Marktentwicklung und stabiler Wechselkurse. Zur Bilanzpressekonferenz im April dieses Jahres war ZF noch von einem Konzernumsatz in der Größenordnung zwischen 37 und 38 Milliarden Euro, einer bereinigten EBIT-Marge zwischen 5,0 und 5,5 Prozent sowie einem um Unternehmenskäufe und -verkäufe bereinigten Free Cashflow von rund einer Milliarde Euro ausgegangen.

Quelle:

ZF Press Release 02 August 2019

## **Comprehensive component support for Asiana Airlines A320 fleet**

*Long-term Total Component Support (TCS®) for up to 79 aircraft*

*Contract includes the future Airbus A320neo family aircraft fleet*

Asiana Airlines has signed a comprehensive component support contract with Lufthansa Technik AG. Under the terms of the new agreement, Lufthansa Technik will provide Total Component Support (TCS®) for the entire fleet of Airbus A320 family aircraft, including the A321neo version joining the fleet in the future. The ten-year contract started in July 2019 and covers a maximum of 79 aircraft.

Danny Kim, the General Manager of Asiana Airlines, said: "Lufthansa Technik is a strategic partner for us who has proven over years that it can guarantee long-term security in the material supply of our fleets. We are convinced that this successful cooperation will also prove itself in the component supply of our new A321neo aircraft."

Kijung Shin, Corporate Key Account Manager Lufthansa Technik, said: "During the past decades, Lufthansa Technik has always been committed to providing customized services and optimal solutions to Asiana. The new contract underlines the trust of the airline in our credibility and reliability and motivates us to raise our all-round performance to an even higher level."

The contract holds provisions for being converted from an integrated Total Component Support (TCS®) agreement including pooling to a Total Component Maintenance (TCM) closed-loop component repair and overhaul support in the mid-term.

Lufthansa Technik and Asiana Airlines have been working together for more than 25 years already. Lufthansa Technik also provides component maintenance for the Asiana Boeing 777-200ER fleet, an integrated Total Component Support for the airline's Airbus A320, A330 and A350 fleets as well as V2500 and CF6 engine support and heavy maintenance for the carrier's Airbus A380 fleet.

Quelle:

Lufthansa-Technik Press Release 20 August 2019

## **Angolan Air Force receiving two MA60 transport aircraft from China**

Angola's Air Force is taking delivery of two Chinese-built Xian MA60 twin-turboprop transport aircraft, which have been spotted on their delivery flight to southern Africa.

The two aircraft were seen on 21 August at Dhaka/Hazrat Shahjalal International Airport in Bangladesh, in Forca Aerea Nacional de Angola (FANA, Angola Air Force) markings with Chinese ferry registration (B-00D8 and B-00D9).

According to Scramble, they will be operated by the Esquadra de Transportes which is based at Base Aérea No 1 (Luanda/4 de Fevereiro).

The aircraft were ordered from Xian Aircraft Industry Company in January 2018 but the state-owned Aviation Industry Corporation of China did not at the time specify the operator.

The MA60 is a stretched version of the Xian Y7-200A, which is based on the Antonov An-24. The MA60 was designed to replace earlier Y-7 variants. The MA60 first flew in March 2000 and received its type certificate from the Civil Aviation Administration of China in June 2000. The first aircraft was delivered to Sichuan Airlines in August 2000.

The MA60 can carry 60 passengers at a cruising speed of 430 km/h over a range of 1 600 kilometres. It is powered by two Pratt & Whitney Canada PW127J turboprops, each producing 2 051 kW (2 750 shp).

It has been sold to other military operators in Africa, including the air forces of Cameroon and Djibouti.

Soon after Angola ordered the MA60s, it also ordered three C295 transport aircraft from Airbus in March 2018, and will use them for transport and maritime surveillance duties. The Angolan Air Force relies mainly on An-12, An-24, An-72, C212 and Il-76 aircraft for its transport requirements.

Quelle:  
defenceWEB 22 August 2019



### **ARJ21 aircraft conducts demonstration flight in Yunnan-Guizhou Plateau**

China-made ARJ21 aircraft successfully completed a flight in the route of Kunming-Lijiang-Xishuangbanna-Kunming on August 19th, 2019, which indicates that the route demonstration flight of ARJ21 aircraft in southwestern region of China has officially kicked off. The demonstration flight would last for three days and would be carried out in two cross routes and three counter routes among eight airports in Kunming, Lijiang, Xishuangbanna, Tengchong, Lincang and Dali, mainly to display the performance of ARJ21 aircraft in plateau conditions and its compatibility with high-altitude airports and explore the regional aviation express lines in southwestern region of China. During the demonstration flight, Commercial Aircraft Corporation of China, Ltd. (COMAC) would organize a seminar on ARJ21 aircraft plateau operation to discuss the aviation market and route operation in plateau region of China and communicate with customers about the demonstration flight.

As southwestern region of China is rich in tourism resources, building a route network for air transportation can improve the accessibility of this region and greatly reduce the time cost of tourism in southwestern region of China. According to relevant statistics, the airports in Yunnan have accommodated 532,900 take-offs and landings for transportation in 2018, with a passenger throughput of 67.5856 million person-times, and especially, Kunming airport has ranked 35th in the world in passenger throughput, therefore this region enjoys unique advantages in developing regional aviation. ARJ21 aircraft is the first type of regional jet designed in accordance with the operating conditions in mid-western & northern regions of China, which has excellent performance in plateau and high temperature conditions and crosswind performance, and especially could meet the requirements of take-off and landing at the airports in southwestern region of China and obstacle clearance along complex routes.

By the end of 2018, there are a total of 36 high-altitude civil aviation airports in China, most of which are in western region of China. According to relevant statistics, the four airports of Kunming, Lanzhou, Lijiang and Xining account for more than 95% of the transport volume of general high-altitude airports in China. As the development of regional aviation in China and the social and economic development in mid-western region of China can promote each other, the increase of air transportation service coverage and the improvement of aviation operating environment can not only facilitate local people's travel, but also promote the high-quality development of regional economy. With the improvement of COMAC's production capacity

and the expansion of ARJ21 fleet size, the China-made regional jet will play an important role in the balanced and coordinated development of various regions in China.

At present, Chengdu Airlines, as the first operator of ARJ21 fleet, has successively opened more than 20 routes in more than 20 cities, and carried more than 450,000 passengers.

Genghis Khan Airlines, as the second operator of ARJ21 fleet, has launch the maiden flight on July 26th, 2019 and officially started the commercial operation. To create conditions for accelerating the market-oriented development of ARJ21 aircraft in mid-western & northern regions of China, COMAC has always adhered to the principles of customer centered and market oriented, carried out the tasks such as design optimization, batch production and delivery, and operation support in a down-to-earth manner, set up a 24/7 rapid response service mechanism to ensure the safe and smooth operation of the aircraft, striven to provide markets and customers with aircraft which are safer, more economic, more comfortable, more environmental-friendly and more adaptable to special environments such as plateau and high temperature, vigorously promoted the high-quality development of regional aviation in China, and made efforts to build China into a civil aviation giant in the new era.

Quelle:

COMAC Press Release 19 August 2019

### **C919 AC104 completes first flight test**

C919 AC104 took off from the fourth runway of Shanghai Pudong International Airport at 5:32 on August 1st, 2019, and landed at 6:57 after completing a number of test points and initial control inspections of various aircraft systems during a flight of 1 hour and 25 minutes, successfully completing its first flight test.

AC104 is the fourth C919 flight test aircraft, which mainly undertakes the flight tests related to avionics system, takeoff/landing performance, automatic flight system and natural icing. So far, Commercial Aircraft Corporation of China, Ltd. (COMAC) has put four aircraft into flight test, among which AC101, AC102 and AC103 have carried out flight test in Yanliang of Xi'an, Dongying of Shandong and Nanchang of Jiangxi, the static tests and other ground verification tests are in steady progress, and the development of C919 aircraft will enter the phase of high-density, high-difficulty and high-risk flight tests.

Quelle:

COMAC Press Release 01 August 2019

## **Oman Air Cargo rolls out its mobile App solution using ‘SmartKargo’**

Oman Air Cargo has successfully launched the mobile App to all Oman Air Cargo customers including Shippers and Freight Forwarders. This is in collaboration with QuantumID Technologies, which is Oman Air’s cargo system solution provider for ‘SmartKargo’ platform. The mobile App was officially launched in the pilot station Oman (home market) back in January 2019 at the annual event of Oman Air Cargo held in Muscat to felicitate and reward the best performing Cargo clients and agents in Oman. The Mobile app will be released for rest of the markets across the world in stages this year.

This Mobile App, available to download on both Apple and Android App stores, is the first step on Oman Air Cargo’s journey to 100% digitally transform their business and builds on the successful deployment of SmartKargo cloud-based Cargo Management solution that was launched back in September 2017.

This Mobile App opens a whole new Sales and Distribution channel for Oman Air Cargo business. At the same time, it empowers Shippers and Clients by providing them with self-service and mobile capabilities (access any-time, from anywhere) for their most used requirements to interface real-time with Oman Air Cargo, including quote, flight schedules, and capacity queries, to real-time bookings and tracking notifications.

Some of the additional benefits that come with the use of this mobile App are the improved accuracy of the shipment information and facilitation of shipment readiness when it reaches the airline warehouse, ability to book shipments on the go, provision of easy-to-access “Guest” mode that allows non-registered customers to check schedule, track shipment & get a quote, enhanced security with touch ID access as well as real time synchronisation and availability of all information and bookings done through the App on SmartKargo main ERP solution and also on the cloud instantly

Quelle:

OMAN AIR Press Release 19 August 2019