

PRESS RELEASE

ILA update – 28 April 2018

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TORO – walking robot at the ILA Berlin

Bipedally based motion has a number of advantages over wheel-based movement. For example, a bipedal robot only occupies a relatively small standing area and can climb over small obstacles. However, there are major challenges in terms of walking stabilisation and balance regulation. In order to investigate these interconnections, the Institute for Robotics and Mechatronics at the German Aerospace Centre (DLR) has developed a bipedal humanoid robot known as TORO (TORque controlled humanoid Robot). One of the special characteristics of this robot is its torque-controlled drive unit which, in combination with sensors, enables the robot to be regulated in a flexible way. This has advantages in ensuring its safe interaction with humans and also for a robust contact with unknown environments. TORO can be found on the DLR stand in Hall 4 at the ILA Berlin, where it can sometimes also be encountered on the footway.

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High-tech from Russia at the ILA 2018

The Russian manufacturers' combined stand at the ILA 2018 features many interesting products from the aviation supply industry, as well as advanced drone technology from a number of developers. Examples include the Autonomous Aerospace System from Siberia, which specialises in developing versatile and powerful unmanned air systems, including a hybrid device that can take off and land vertically like a helicopter, but in other respects can move at high speed through the air like a normal aircraft. SEL from Samara on the Volga also specialises in drones for various applications. One of the best-known suppliers to aircraft constructors is Hydromash from Nischni Novgorod, a specialist in highly robust landing gear systems, which have proved their effectiveness in various Russian airliners. The avionics supplier NPP Polyot is also sharing the stand. Special highly responsive sensor technology for automated applications is available from the Moscow-based company TFT Thin Film Technology. CTP – Centre of Technical Projects is presenting its latest products in the fields of construction, structural tests, technical publications and interactive training tools for industry. And Aviaexport from Moscow specialises in the import and export of



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aircraft, in marketing and international joint ventures, as well as the organisation of maintenance contracts.

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Pilot training more economical than ever before

The high level of demand for commercial pilots is making it easier for many young people to succeed in finding their dream job. Lufthansa Aviation Training is at the ILA with details about career opportunities. Depending on the training route chosen, the student's own share of the training costs is still only 60,000 or 80,000 euros. This is initially deferred until the pilot's licence has been obtained and permanent employment has been guaranteed with one of the airlines belonging to the group, when it will be deducted in instalments from the pilot's pay. In addition students at flying schools who have passed the acceptance tests will receive a 20,000 euro grant. This enables them to meet their living costs during some two years of training, or can be used to help out with the training costs. A high school-leaving certificate is no longer a prerequisite for prospective pilots. Candidates who have obtained a secondary school leaving certificate and have completed their training in another profession are also offered an opportunity to undertake pilot training.

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Demonstrating an air emergency

In a fascinating demonstration at the ILA visitors will be given insights into the measures undertaken by members of Germany's armed forces, the Bundeswehr, to deal with an air emergency. This can be initiated for example, if radio contact with an aircraft is lost. Two Eurofighters are immediately scrambled to assess the situation by making visual contact. This exercise demonstrates one of the core capabilities of the Bundeswehr: maintaining security in the airspace. For anyone looking for a challenging career or a change of profession: details about the subject of careers are available in the HeliLounge (Hall 3). It is also worth taking a look inside the recruitment marquee or the careers truck in the Bundeswehr section of the outdoor display area. Anyone who has felt the urge to jump out of an aircraft can sample the experience on the jump simulator, wearing VR glasses. Also worth seeing is the rescue centre, right next to the grey A310 MRTT, and which has to comply with the same standards as those of a German hospital. Information is provided here about dealing with cases of shock and initial emergency surgical intervention, as is being practiced currently by the Bundeswehr in its deployment in Mali and Afghanistan.

Outdoor display area (Bundeswehr), contact: Major André Hesse-Witt, tel.: +49 (0)171 972 4874

Good opportunities for beginners in the drone business

Professor Stefan Levedag from the German Aerospace Centre (DLR) believes that "incredibly good opportunities" exist for newcomers to that area of aviation concerned with drones and their management. During a panel discussion at the ILA Careers Centre, Levedag stated that this applies not only to the manufacture of aerial vehicles and the technology required to operate them, but also to the specialists re-

sponsible for drawing up the rules under which drones are operated in airspace. Jan-Hendrik Boelens from Volocopter, one of the manufacturing firms, said that although it was already possible to operate air taxis in Germany, they still have pilots on board. He expects planned operation to commence in two or three years, in cities too. "Good opportunities exist for students in this area", Boelens said. Alexander Köthe from the Technical University Berlin explained that the technical differences between aviation with and without pilots were narrowing all the time. Instead the difference lies in "passenger perception". A major challenge in the case of air taxis is in overcoming the passenger's psychological barriers. Consequently all those on the panel believe that the first commercial applications will be in logistics. "The relationship between the means of transport and the freight is more economical in the case of drones than with most other forms of transport", Köthe said. Levedag allayed fears that, in the short term, unmanned air transport could put jobs at risk. Instead there would be more, innovative applications. "I don't see a great deal of competition."

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Premium Aerotec presents the first CRP pressurised dome section for the A320

Premium Aerotec has succeeded in manufacturing a large component, part of the primary structure of an aircraft, from CRP with a thermoplastic matrix. A full scale example of the world's first close-to-production demonstrator of a pressurised dome section for the A320 series from Airbus is being displayed to the public for the first time by this company at the ILA 2018. This component, which seals the pressurised cabin at the rear of the aircraft, is made from eight segments of equal size, connected together using the latest welding techniques. The use of CRP reduces production times and manufacturing costs, as well as achieving significant weight savings.

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Return of the 'candy bombers'

When in June 1948 the Soviets began their road, rail and waterway blockade, the USA and Britain airlifted vital goods such as coal, food and building material to West Berlin. Planes landed sometimes only minutes apart at Tempelhof, Gatow and Tegel Airport. The latter had taken just three months to complete. On 12 May 1949 the blockade was lifted, while flights continued into the autumn. 70 years after the airlift, as part of an event planned by Peter Braun, Thomas Keller and Jörg Siebert, the candy bombers will be back where it all began. Gail Halvorsen, the legendary candy bomber pilot, now aged 98, will act as patron of this once-in-a-lifetime project. It was his idea to fashion tiny parachutes and drop candy to waiting Berlin children as the planes came in to land. The owners of 34 Douglas DC-3s and DC-4s have made a firm commitment to take part. 19 planes will be coming to Europe from the US. First, they will visit two of the original bases which supplied the airlift. On 9 June 2019 they will land at Wiesbaden US military airbase, and three days later at the airfield in Fassberg, previously a British base and now run by the Bundeswehr. The German military, the US Air Force and the two towns have all pledged their

support. On 15 and 16 June the journey will continue to Berlin, where these classic aircraft will land at Schönhagen airfield south of the capital at intervals of only minutes apart, as they did all those years ago. The airports where the airlift originally took place are now closed. However, just like 70 years ago, candy drops are planned over Gatow and, if possible, Tempelhof. The organisers are still looking for sponsors to finance the fuel costs and accommodation for the crews. Visitors to the ILA can find out more about the project from the Berlin candy bomber located on the outdoor display area.

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Ultralight for newcomers to amphibious aircraft

Flywhale is the name of a two-seater ultralight amphibious aircraft being displayed at the ILA 2018 by Winfried Rall from Flugschul-Charter & Freizeitservice "Otto Lilienthal" based at Stechow/Ferchesar airfield. "We want to use this brand new aircraft to familiarise ultralight pilots with the secrets of amphibious flight", says Rall, who is also a member of the German Amphibious Pilots Association, which is also represented on the stand. An increasing number of pilots want to familiarise themselves with taking off and landing on the few remaining areas of water available to amphibious aircraft in Germany, and to enjoy this particular form of freedom on their travels, for example in Poland or Scandinavia. The "flying whale", is manufactured by a company in Lower Saxony and is powered by a 100 bhp Rotax 912 engine. With its retractable undercarriage it can take off from asphalt or grass runways or from water, and is ideal for pilot training. Starting on 10 May 2018 the UL seaplane licence can be obtained from Rall, the prerequisites being a sport aircraft pilot's licence (UL pilot's licence), a minimum of twelve take-offs accompanied by an instructor, and a test flight.

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Antonov Airlines intends to take over SALIS project on its own

At the weekend too Ukraine's Antonov Airlines will be giving visitors to the ILA a chance to look at the world's largest aircraft, the six-engined An-225. On Saturday evening the giant will be flying to Leipzig, and there is a reason for this. The Russian company Volga-Dnjepr has given notice that it does not intend to renew its contract that expires at the end of this year, as part of the Strategic Airlift International Solution (SALIS). This contract between the two civilian freight companies handles military transport for various NATO countries. As a consequence, Antonov Airlines has applied to be the sole contractor for this project, as announced by its Commercial Director, Andriy Blagovisniy, at the ILA. The intention is to base two An-124s in Leipzig and to make four more aircraft available at short notice if additional demand arises.

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Used carbon materials included in batteries

For some years carbon fibre compounds (CFC) have been used increasingly in the construction of modern aircraft. They are lighter and easier to work with than metals, while offering the same degree of

strength. As a result new questions have arisen with regard to recycling: what to do with the material from the wings and fuselage if it cannot be processed in scrapyards? The Fraunhofer Institute for Chemical Technology has found an answer, by incorporating recycled carbon fibres in the materials used for batteries and fuel cells. At the ILA 2018 researchers will be showing how the fibres can be turned into electrodes (bipolar plates) on an industrial scale. To some extent they can be used to replace natural graphite, currently an expensive import from China.

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Flying whale lands at the ILA

On Saturday, a Beluga was among the aircraft that landed at the ILA. On the weekend open to the public visitors will be able to marvel at the special transporter, which was designed for carrying large Airbus components. The aircraft was named after the beluga whale due to its similarly shaped fuselage. Officially, the aircraft is an A300-600ST, an evolutionary development of the civilian A300, featuring an extended cabin and upward swinging hinged door. The initials stand for Super Transporter. Only five were built and these have been operating since 1994. Currently, development of the Beluga XL is underway, which is based on the A330.

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Nothing works without ILA flight director 'Conny' Cornelius

Wolfram 'Conny' Cornelius always has everything under control. At ILA 2018 the long-standing ILA flight director is again responsible for the complex programme of flying displays and their coordination. "The ILA flying displays have always maintained a high standard of safety", is how Cornelius describes his task. "Every flight must satisfy the strict criteria of a team of experts without the participation of the public. Only following an acceptance flight is approval given for a demonstration at the ILA." All safety requirements issued by local authorities are monitored on the ground. Thanks to state-of-the-art equipment Cornelius and his colleagues are able to constantly keep an eye on flight altitudes, speeds and noise limits. As a former naval pilot with long years of experience flying Starfighter and Tornado fighters, as a test pilot for Dornier and currently a self-employed pilot, Cornelius knows exactly which flying manoeuvres are safe. Every morning a detailed briefing is held with dozens of pilots on the weather conditions and any other special observations. And should any pilot have ignored agreed limits the previous day he will be in for a severe dressing down from the ILA flight director, no matter how much flying time and flight experience he has to his name.

ILA Day of the Giants

The first public day at the ILA Berlin 2018 has become a Day of the Giants: In bright sunshine on Saturday four record-breaking aircraft were assembled at Schönefeld, more large aircraft than ever before at the ILA. The first to arrive in the morning were the Airbus Beluga and the Lufthansa Boeing 747-8 "Brandenburg". The super-freighter with an extra-high and extra-wide fuselage from Airbus, used to carry air-

craft components between various production sites, has the second large cargo carrying space (1,820 cubic metres), while the Jumbo is the world's longest passenger aircraft (76 metres). Based on capacity, the A380 is the largest passenger aircraft, and in the version operated by Emirates (up to 615 passengers) is a regular visitor to the ILA. Competition arrived mid-week in the form of the largest and heaviest aircraft to take to the skies, the Antonov An-225 heavy lift freighter (88 x 84 metres, 285 tonnes).

Pilotless air taxis: CityAirbus presents a concept study

Unmanned air taxis could soon be the dominant feature of urban mobility, in Germany's major cities too. "Being able to use inner city airspace is important if individual mobility is to be retained in our inner cities", according to the minister of state for digital technology, Dorothee Bär (CSU), speaking on Thursday at the ILA air show. The conditions for a test phase are currently being investigated. This could also include the concept study for a CityAirbus, as presented by the helicopter subsidiary of the European aerospace group at the Future Lab at this year's ILA. The pilotless helicopter would be kept aloft by a total of eight 140 kilowatt electric motors, would attain speeds of 120 kph and carry four occupants to inner city destinations. This aircraft is due to make its maiden flight in Donauwörth by the end of this year.

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A career in aviation or chancellor of Germany?

Thomas Biermann holds physicists in great respect. This was stated by the head of the Department for Business, Information Technology, Law at Wildau Technical College on Friday at the opening event of the Careers Centre at the ILA 2018. "With this training one could even become the German chancellor", he joked. He holds a doctorate in politics and was employed by Lufthansa for many years. In front of some 40 young people this joke was intended to illustrate his view that it is not a bad idea to study physical engineering if one wanted a career "with the smell of aviation fuel". Anyone who is uncertain should keep a few options open, "by doing something that is not so specialized". This view was shared by Cord Buck, head of training at the Hamburg Airbus location. "A dual course of studies also offers plenty of scope." Those who start at Airbus spend the first eight weeks "wearing blue overalls" in the production department, followed by 90 weeks in various practical modules, and some 64 weeks at the university. Good grades are important, along with several languages, one of which must be English, and if possible a programming language, according to assistant professor Christian Janke from the Embry-Riddle private university. But Biermann added: "No reason to panic. If you are certain that this is for you, you will succeed, even though your grades may not average 1,2." Buck pointed out that Airbus is also looking out for so-called soft skills such as the ability to communicate or networking. "Networking is vitally important", they all agreed. A walk through the Careers Centre, taking everything in, is also a useful step in the right direction.

Venue: Careers Centre, Hall 1, contact: BDLI, tel.: +49 -30 -2061400, email: kontakt@bdli.de

Airbus + Audi = Mobility in three dimensions

The car maker Audi and aircraft constructor Airbus plan to combine their capabilities and offer a joint limousine and helicopter service. This service is due to start this summer in the Brazilian city of São Paulo and in Mexico City, it was announced by the two companies on Thursday during the ILA in Berlin. Customers would be brought in an Audi to the landing pad, and continue their journey from there in a helicopter from Voom. Voom is the on-demand booking platform set up by Airbus in 2016 specifically to provide helicopter services. "This important partnership with Audi is intended to meet current and future challenges presented by urban mobility", said Airbus CEO Tom Enders. "The first significant milestone in this joint venture will be to offer multi-modal transport solutions for the world's most congested cities." Moreover this collaboration is also intended to provide new findings as a preliminary stage for more far-reaching projects, such as the electrically powered, unmanned modular mobility concept Pop Up, which is being developed jointly with Italdesign, or the technology demonstrator CityAirbus, due to lift off for the first time at the end of 2018.

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Weather at the ILA for Sunday, 29 April 2018

Showers and thunderstorms will be moving into the west and north west of Germany, while the area around the ILA will continue to be slightly cloudy. No precipitation is expected. The easterly wind will freshen at midday and in the afternoon, and it will become cooler, with temperatures normal for early summer.

Source: German Meteorological Service, tel.: 030 3038-86023, S. Säger and P. Quente

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www.ila-berlin.de/en/media

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