

1 The German ExtremeAir company, a manufacturer of high-end aerobatic aircraft, showed the stunning XA42 Gold, a top of the range variant of their single-seat pure aerobatic mount with additional comforts for transitioning cross-country flights, such as additional luggage space, a canopy operated step and a full glass panel and autopilot. Also featured was an all-new two-seat aerobatic trainer, the XA22. Like its siblings, constructed in carbon fibre, its 210hp AEIO-390 Lycoming gives it a max cruise of 156kts and a 2250 fpm climb rate. It is stressed to +/- 8G and should fly later this year and be available from 2020. Anticipated cost is around €250K. www.xtremeair.de



2 Czech Sport Aircraft, manufacturer of the Cruiser PS-28 (formally the SportCruiser), had an all-new aircraft at the show, the high wing Delta, which they showed as a floatplane. Of all metal construction, this production prototype is a 600kg machine with a claimed 108kt cruise at 75% of its 912ULS power plant. It should be in production in a year and cost (without floats) €100K. <https://czechsportaircraft.com>



3 Moving the gyrocopter into the off-airfield 'adventure' realm is the new Aventura-S from Switzerland. It features rough terrain tyres and rugged landing gear, self-sealing fuel tanks and an optional ballistic chute. A max all up of 600kg gives it a useful load of 300kg and a range of 500nm/six-hour endurance. Multi attachment points make it a useful platform as a workhorse for surveillance, aerial filming, agricultural use etc. The Rotax 914 turbo engine is the standard fit, providing for hot and high operations. www.ventura.aero

AERO 2019

Even if a certain beer producer organised a recreational aviation exhibition, it probably wouldn't be as good as AERO Friedrichshafen. Words by **Brian Hope**. Photos: **Neil Wilson** and **Brian Hope**.

The annual AERO exhibition at Friedrichshafen never fails to enthral and must rate as one of the most important recreational aviation shows in the world. This year it was held from 10-13 April (next year it will be 1-4 April 2020) and the delightful halls of the Messe Friedrichshafen exhibition centre were packed with interest. Situated on the banks of Lake Constance, the city and surrounding area lend themselves to a picturesque holiday location with plenty of attractions and affordable dining and accommodation, particularly if you stay a few miles out of the centre.

So, what was new and interesting this year? Well, to be honest, a short article in the magazine is only going to scratch the surface, as even concentrating mainly on our end of the market, there was certainly a lot to see. The 141hp Rotax 915iS is finding its way into many more aircraft this year, now that it has actually become available, and a number of manufacturers are already launching 600kg variants of their Ultralights (microlights in the UK) in anticipation of the EASA opt-out for up to 600kg aircraft. Despite Brexit and a downturn in the growth rates of several EU economies, it remains as enthusiastic a marketplace as ever!

4 This interesting little Italian single seater is the yet to fly ZM-1 and features either a two-stroke Simonini Victor 2 or a Jabiru 2200. Claimed max weight with the former is 315kg (190kg empty). The carbon airframe is stressed to +6/-4 and performance with 100hp (neither of which the proposed engines produce) is under 35kt stall and 150kt max speed. Price of a kit with the Simonini is €80K. www.zmaircraft.com

5 The Vampire FM250 from carbonDESIGN s.r.o. in the Czech Republic is an ultralight that is now claimed will fit the new 600kg category. Designed for the 80hp 912UL and 100hp ULS it has a range of 430-650 miles and a cruise speed of 97-118kt. It can also be configured as a glider tug for gliders up to 750kg. www.carbondesign.cz

6 Aquila's two-seater, the A210/211/212 series, first flew in 2000 and has sold well to training schools and private pilots. They showed this mock up fuselage of a new four-seater at the show, destined to be powered by the 915iS driving a three-blade constant speed prop as standard. Projected cruise performance posted for this 1050kg max all up aircraft with a useful load of 650kg is a 130kt. <http://aquila-aviation.de/en>



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1 Blackwing Sweden introduced their fixed gear Blackwing side-by-side (47.5ins/120cm wide cockpit) high performance ultralight in 2015 and this year showed a retractable gear version, powered by a 141hp 915iS. Another stunning creation in carbon fibre, the aircraft is also being sold as a 600kg category machine and is available ready to fly or as a 51% kit. Quoted performance is impressive, 175kt cruise for the RG with the 915 and 150kt with 100hp, and a 35kt stall speed. <http://blackwing.aero>



2 Flight Design has had its problems but appears to be back on its feet again and the all-new F-Series was announced at the show. Rather than a replacement for the CT, the F2 is a physically larger and more comfortable new addition to the offering. Though externally very attractive, the cabin design left something to be desired and UK agent, Gary Masters of Airmasters UK Ltd., commented that as the aircraft was still a prototype, there will undoubtedly be a redesign of the interior. Among the many positives were the larger doors, offering easier access, and a large luggage area behind the seats. The aircraft also features a 'crash zone' in the firewall area that includes a titanium 'wall'. Rotax 912iS and 915iS engines will be offered and prices start at €143K. <https://flightdesign.com>



3 One of the most intriguing aircraft on display was the Horten Aircraft HX-2 flying wing, a two-seat prototype that had made some initial test flights just prior to the show. Flying wings are potentially very efficient because they do away with the fuselage which creates drag and offers zero, or minimal lift. Based on the lifetime work of Reimar Horten, who died in 1994, and designed by Hans Heinen, who himself has 40 years' experience as an aerodynamicist, the two-seat prototype has a predicted max speed of 150kt and a range of 3,500km on its Rotax 912iS and twin 120 litre fuel tanks. Following completion of satisfactory flight testing, and discussions with potential stakeholders, Horten Aircraft will decide where the design goes from here. Electric, unmanned and five-seater variants are all said to be future possibilities. www.horten-aircraft.com

4 Among the ever-growing number of electric aircraft is the intriguing AutoflightX V600. A 'young' company in every sense of the word (it was founded by former Yuneec International designer Tian Yu in 2018 and draws talent from the Technical University of Munich), its aim is to produce a 3-5 passenger carrying fully autonomous vertical take-off machine. This yet to fly prototype is designed as a manned two-seat proof of concept machine and should fly later this year. The two horizontally aligned propellers lift the machine into the hover and then the rear mounted propeller will provide forward motion, the 'lift' props stopping and re-aligning with the booms. The batteries are built into the wings. www.autoflightx.com





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5 Trig Avionics introduced two new radios at AERO designed to work with their TT21 transponder and TMA45 audio panel to form a traditional sized avionics 'stack'. The TY96 (10 watt) com features a host of user friendly features, including dual watch and say again – which records the previous message – and is only 33mm high. The TX56 nav/come is equally slimline and with the T1106 course deviation indicator, offers a serious VFR/IFR platform to replace legacy avionics or provide a state-of-the-art new fit. Add the certified TN72 GPS – TABS (Traffic Awareness Beacon System) configuration, which uses SIL 1 in the transponder settings, and Trig's purpose designed wiring harnesses and you also have ADSB out for an all-in price of less than £6,500 (excluding VAT). www.trig-avionics.com



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6 It was great to see a number of British companies at the show, including Adams Aviation, Pooleys, Light Aero Spares, Trig Avionics and Andair. Pictured is the team from Andair with Owen Phillips, far right, who now runs the company his father Andy, second right, started. They had a number of new products on display, including a prototype electrically operated fuel valve control unit that will take any of their manual fuel valve combinations; and a very compact transfer fuel pump that moves 150 litres (40 US gall) per hour. www.andair.co.uk



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7 An old favourite hopefully making a return is the CAP10, one of the most desirable aerobatic trainers come tourers ever produced. Subject to sufficient interest, Robin Aircraft intend putting it into production from 2020, and this particular machine is a new build rather than an overhauled 10C. The CAP 10NG (New Generation) will feature electric trim and flaps, and the carbon main spar which was used in the CAP 10Cs, in what is ostensibly a wooden airframe. Price will be from €295K. www.robin-aircraft.com/en



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8 This lovely Culp Special was built by a Swiss builder and was featured on the Experimental Aviation of Switzerland (EAS), the Swiss homebuilding association's stand. It flew only a few weeks before the show and was flown into Friedrichshafen. Working with Steen Aerolab, American Steve Culp developed the modifications necessary to turn the Skybolt into this 1930s-style aircraft. It is fully aerobatic and uses a 360hp nine-cylinder Russian M-14P radial power plant. The two-seater has an empty weight of 1,480lb, a cruise speed of 150mph and range of 600 miles. Aircraft Spruce and Specialty can provide plans and kits. www.aircraftspruce.com

9 Siemens continues to work with a number of manufacturers developing electric power solutions. They are by far the largest player in the market and had a large stand highlighting all manner of exciting futuristic developments but relied on manufacturers to show actual hardware on their own stands. This is an e variant of the new Flight Design F2 which currently has a max duration of 40-minutes. Promised duration when in production is two hours.



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10 Diamond Aircraft's DA50 five seat single has a new lease of life now the company has decided to install Continental's 300hp CD-300 V6 diesel engine and target the market Cirrus SR22 market. The aircraft flew for the first time on 22 March 2019. www.diamondaircraft.com



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11 If you fancy a fuel-injected Rotax engine but prefer the mechanical rather than electronic route, emeca may have the answer (subject to LAA approval of course). Available from 2020, their conversion kit contains all you need to convert your carburetted Rotax 912. Injection solves the carb ice issue and emeca claim a converted engine reduces emissions, consumption and pollution, and enhances performance at altitude. Anticipated conversion kit price is €4,000. www.e-meca-injection.com