New Turboprops

Manufacturers offer plenty of options for the growing international market by Mark Huber

There were two major developments in the business turboprop sector this year and neither involved new aircraft. However, they did show where potentially the next growth area is for the turboprop market downstream. Turboprops historically have been a useful vehicle for introducing new customers into the corporate aircraft market, provided operators can maintain price discipline.

Turboprops are not jet, but when operated with their proper parameters—loyalty within customer expectations—they can provide transportation in a way that is both safe and reliable. Without the performance and steady growth of Pilatus PC-12 operators, the Swiss design, which flies 30 of the big turboprop singles, or the thoughtful launch of King Air 250 last year, the all-composite Primus 150, with sting more than just a little similar to the old Epic Eclipse, is aimed to be an aircraft to be aimed at buyers of the Pilatus PC-12/42.

The preliminary concept includes seating configurations for 9 to 11 (including the pilot). Cabin dimensions: 5.5 feet wide, 4 feet high and 20 feet long. The N6BA IRB four with four passengers would be 1,700 pounds and high-speed cruise 110 knots at FL280. The airplane would have a max payload of 2,300 pounds and a full-load payload of 1,560 pounds.

Just how exactly this project will be able to proceed when Beechcraft finds a buyer for its former Hawker jet division remains unclear, as the composite windmill machines that would be used for the PD434 fuselage are ideal for the market value of that project. Beechcraft is currently recruiting engineers for PD434.

EAGE TURBINE

BEECHCRAFT PD434

Newly emerged from the chains of bankruptcy and its money-losing jet division, Beechcraft announced plans late last year for a new line of turboprops. Work appears to be proceeding at least on two different e-cores, code-named PD434/5. Beechcraft did not return inquiries seeking comment on the new project, but it is believed to be a single-engine design that may incorporate the all-composite, wing-based fuselage of the discontinuing Premier IA twinjet with new wings, empennage and a single turboprop engine mounted in the nose. Target cost is reported to be in the $1.5- to $4 million range. The aircraft is thought to be aimed at buyers of the Pilatus PC-12/42.

The concept includes seating configurations for 9 to 11 (including the pilot). Cabin dimensions: 5.5 feet wide, 4 feet high and 20 feet long. The N6BA IRB four with four passengers would be 1,700 pounds and high-speed cruise 110 knots at FL280. The airplane would have a max payload of 2,300 pounds and a full-load payload of 1,560 pounds.

Cessna Grand Caravan EX

Cessna received certification of its souped-up $2.149 million Grand Caravan EX (208B) last December and has posted brisk sales so far this year. The EX represents the 208B-1P1/144er, a more aerodynamic, stretched propeller with more power, the Garmin 1000 glass-panel avionics system, phatter mirror, new air induction intakes (noisegear cooling fairing), different flaps settings, engine torque limiter and new maintenance features, including an easily accessible overhead compartment. Previously, the noisegear cooling fan on the 208B was available only with a 115-volt-to-captive electric fan. It is now standard on the EX.

Pilots used to have the choice of three different flaps settings on the 208B: 10, 20 and 30 degrees. Now there are only two: takeoff (about 20 degrees) and landing (30 degrees). The torque limiter is a new addition for the EX. It limits torque to 2,800 foot-pounds and varies the level of torque with ambient conditions such as temperature and pressure. It is not a Fodder or an EEC system and the pilot is still responsible for making the proper power settings. The new engine delivers a 40 percent increase in climb rate, about 10 knots more cruise speed and a somewhat better specific fuel consumption from a more efficient compressor. While the new engine has a standard TBO of 3,000 hours, that can be increased to 6,000 hours or 12 years for specific conditions with P&H Part 121/135 operators. The E1000, a 2,560-shp version of the PD434, can now be equipped with amphibious floats. Walter certified the $430,000 Walter WA500, the 500-series four that is used to produce 1,600-foot level flight with an improved main gear retraction system. The new engine now has 1,000 pounds of lift and a visible mechanical gear-position indicator. The landing gear has been modified to improve handling characteristics in rough water and buoyancy has been added to the tail to allow the aircraft to float for operations at high weights.

Epic E1000

Epic’s campaign to certify a $2.75 million production version of its all-composite LT kitplane continues. The company hopes to have a prototype aircraft flying before year-end and to receive certification by 2015. Over the summer Epic unveiled a new automotive-style instrument panel for the E1000 that was designed in-house and features Garmin G1000 glass-panel avionics. Epic CEO Doug King said approximately 75 employees are working on the program, and that more than 35 E1000s are already on order. After certification, King expects to build 24 to 30 aircraft annually.

The E1000 is powered by a P&W PT6A-67A and has a maximum speed of 232 knots; a range of 1,825 nm; pay- load with full fuel of 1,730 pounds and a 28,000-foot ceiling. The cabin seats six and measures 15 feet long, 4.6 feet wide, and 4.9 feet high. Max W 7,500 pounds. Takeoff distance is 1,680 feet, landing distance is 1,840 feet.

GippsAero GA10

Certifications of this utility single engine turboprop has been pushed back from mid-2013 to the end of 2013, and with good reason. The AirTractor GA10, a stretched turboprop version of the company’s proven GA10 Airvan, is developing various interior configurations for skydiving, aerial survey, small package delivery and personnel and roles. To accommodate different missions, GippsAero is developing various interior configurations for skydiving, aerial survey, small package delivery and personnel and roles. To accommodate different missions, GippsAero is developing various interior configurations for skydiving, aerial survey, small package delivery and personnel and roles.

To accommodate different missions, GippsAero is developing various interior configurations for skydiving, aerial survey, small package delivery and personnel and roles. To accommodate different missions, GippsAero is developing various interior configurations for skydiving, aerial survey, small package delivery and personnel and roles.

King Air E-250

Kestrel K292

The preliminary concept includes seating configurations for 9 to 11 (including the pilot). Cabin dimensions: 5.5 feet wide, 4 feet high and 20 feet long. The N6BA IRB four with four passengers would be 1,700 pounds and high-speed cruise 110 knots at FL280. The airplane would have a max payload of 2,300 pounds and a full-load payload of 1,560 pounds.

Cessna Grand Caravan EX

Cessna received certification of its souped-up $2.149 million Grand Caravan EX (208B) last December and has posted brisk sales so far this year. The EX replaces the 208B-1P1/144er with the more powerful 860-shp PT6A-140, a more aerodynamic, stretched propeller with more power, the Garmin 1000 glass-panel avionics system, phatter mirror, new air induction intakes (noisegear cooling fairing), different flaps settings, engine torque limiter and new maintenance features, including an easily accessible overhead compartment. Previously, the noisegear cooling fan on the 208B was available only with a 115-volt-to-captive electric fan. It is now standard on the EX.

Pilots used to have the choice of three different flaps settings on the 208B: 10, 20 and 30 degrees. Now there are only two: takeoff (about 20 degrees) and landing (30 degrees). The torque limiter is a new addition for the EX. It limits torque to 2,800 foot-pounds and varies the level of torque with ambient conditions such as temperature and pressure. It is not a Fodder or an EEC system and the pilot is still responsible for making the proper power settings. The new engine delivers a 40 percent increase in climb rate, about 10 knots more cruise speed and a somewhat better specific fuel consumption from a more efficient compressor. While the new engine has a standard TBO of 3,000 hours, that can be increased to 6,000 hours or 12 years for specific conditions with P&H Part 121/135 operators. The E1000, a 2,560-shp version of the PD434, can now be equipped with amphibious floats. Walter certified the $430,000 Walter WA500, the 500-series four that is used to produce 1,600-foot level flight with an improved main gear retraction system. The new engine now has 1,000 pounds of lift and a visible mechanical gear-position indicator. The landing gear has been modified to improve handling characteristics in rough water and buoyancy has been added to the tail to allow the aircraft to float for operations at high weights.

Epic E1000

Epic’s campaign to certify a $2.75 million production version of its all-composite LT kitplane continues. The company hopes to have a prototype aircraft flying before year-end and to receive certification by 2015. Over the summer Epic unveiled a new automotive-style instrument panel for the E1000 that was designed in-house and features Garmin G1000 glass-panel avionics. Epic CEO Doug King said approximately 75 employees are working on the program, and that more than 35 E1000s are already on order. After certification, King expects to build 24 to 30 aircraft annually.

The E1000 is powered by a P&W PT6A-67A and has a maximum speed of 232 knots; a range of 1,825 nm; payload with full fuel of 1,730 pounds and a 28,000-foot ceiling. The cabin seats six and measures 15 feet long, 4.6 feet wide, and 4.9 feet high. Max W 7,500 pounds. Takeoff distance is 1,680 feet, landing distance is 1,840 feet.

GippsAero GA10

Certifications of this utility single engine turboprop has been pushed back from mid-2013 to the end of 2013, and with good reason. The AirTractor GA10, a stretched turboprop version of the company’s proven GA10 Airvan, is developing various interior configurations for skydiving, aerial survey, small package delivery and personnel and roles.

To accommodate different missions, GippsAero is developing various interior configurations for skydiving, aerial survey, small package delivery and personnel and roles.
New Turboprops

Continued from preceding page

to nine people. The others will accommodate missions as diverse as medevac, cargo and a high-density configuration for eight passengers. The cockpit features sidestick controls, a low, contoured instrument panel with large flat-panel displays and a wraparound windshield allowing views of both wingtips.

Kestrel has not released a price for the aircraft but it is expected to be in the neighborhood of $3 million. Preliminary specifications include a maximum cruise speed of at least 320 ktas; 1,300 nm range (pilot, five passengers, maximum cruise speed at 31,000 feet and NBAA IFR reserves with 100-nm alternate); 1,200 pounds of payload with full fuel (319 U.S. gallons usable) and 8,500 pounds mtow.

Twins

Beechcraft Twins

Last year the company now known as Beechcraft announced plans for a new single as well as possibly one or two new twins to sit between the Baron G58 piston twin and King Air C90 as well as between the C90 and King Air 250. Just what forms these aircraft take—modifications to existing ones or all-new—remains to be seen.

Dornier Seastar CD-2

Plans to build this $6 million, certified, push-pull, all-composite amphibian in Quebec appear to have sunk, and the lone flying prototype has been returned to the Dornier family in Germany, who underwrote its $150 million design/certification costs in the 1980s and 1990s. A family spokesman said earlier this year that production would not begin without full funding in place and that Dornier continued to seek manufacturing and/or investment partners for the program. The 180-knot, 10,000-pound Seastar is powered by a pair of 650-shp P&WC PT6A-135s. Interiors for the unpressurized cabin range from six-seat executive layout to a 12-seat high-density configuration.

Evektor EV-55 Outback

This $2.1 million light twin from the Czech Republic is closing in on a decade of development and could be certified as early as 2015. However, the order book to date appears anemic and the flight-test program appears to be adhering to a leisurely schedule, perhaps a reflection that it is a largely public-sector project. Evektor claims an international order book for its military/utility/cargo/combi/passenger aircraft, which seats between nine and 14 people.

The project is being underwritten by the Czech ministry of industry and is receiving technical assistance from the Czech army. The aircraft is designed for high-altitude operations at unpaved airstrips. Evektor claims interest from several air forces and is marketing the aircraft to entities currently flying Cessna 402/404 piston twins and Antonov An-2 single-radial biplanes. Earlier this year it announced a deal for the sale of nine aircraft to Siberia with an option for 20 more. The Outback features a quick-change cabin that can be reconfigured in 20 minutes.

Power comes from a pair of P&WC PT6A-21s rated at 536 shp each. Maximum speed at 10,000 feet is 220 knots and maximum payload is 4,021 pounds. Service ceiling is 29,000 feet. The volume of the combined cargo/passenger area is 447 cu ft and the maximum cargo payload is 3,021 pounds. Evektor claims the Outback can take off from, and land on, runways of less than 1,700 feet at 6,500-foot elevation. Evektor has selected Esterline’s CMC SmartDeck integrated digital avionics system as standard equipment.

New Turboprops

NAL Saras

After more than three decades of development, it now appears that India’s indigenous twin pusher turboprop program will not subject itself to the civil certification process and that the airplane’s lone customer, the Indian Air Force (IAF), currently with an order for 15 aircraft, may even opt to reject the final product. Indian officials have stopped commenting on the project altogether and the anticipated time for the first flight of a third prototype has come and gone.

The Saras made its first flight in 2004 and a second prototype crashed in 2009, killing the crew. A subsequent investigation revealed flaws in the flight-test program. Since 2009 the aircraft has undergone a significant redesign, but what commercial market there might have been for the aircraft apparently has evaporated.

GippsAero GA18

The schedule for this aircraft remains uncertain as GippsAero has tied it to finishing the GA10 single, itself now behind on its timetable. Gipps is working on an updated version of the classic Government Aircraft Factories N24 Nomad twin and rebadging it the GA18. Gipps’s plan for the aircraft includes an 18-passenger layout with quick-change options among passenger, cargo and combi. Gipps had intended to fly the airplane last year, but it now appears that the first flight is unlikely until next year, with certification in either 2015 or 2016.

The aircraft likely will be powered by a pair of upgraded Rolls-Royce C250-series 450-shp engines and receive new propellers and a modern glass cockpit, while retaining its historic Stol capabilities, easily using runways shorter than 2,000 feet. Maximum cruise speed is 170 knots and range is 1,080 nm with 2,190 pounds of payload. Maximum useful load is 4,405 pounds. The GA18 will be manufactured at Gipps’s main complex in Victoria, Australia.

Dornier Seastar CD-2

© 2013 AIN Publications. All Rights Reserved. For Reprints go to www.ainonline.com