



reset the clock

A REMANUFACTURED AIRCRAFT COULD OFFER BETTER PERFORMANCE THAN A USED AIRCRAFT FOR MILLIONS OF DOLLARS LESS THAN A NEW ONE – BUT IT’S NOT A FORMULA THAT WORKS FOR EVERY JET

Words by Chris Colvin. Illustration by Phil Hackett



Sinking big bucks into an aging airframe typically makes lenders and underwriters nervous and very few airframes justify the investment of remanufacture. Those that do share common characteristics: they are plentiful, structurally robust, have stood the test of time, and continue to fulfill their missions well when stacked against new aircraft. Updated with new technologies, they are more cost-effective than new aircraft, both in acquisition price and often in direct operating costs.

A truly remanufactured aircraft has had all its time-limited components replaced, and is considered to be a new aircraft type



Still, the price delta has to be compelling, typically 30-50% less than a new aircraft. Which is why, for years, full remanufacture didn't really happen. New engines, avionics, winglets, paint and interiors were available, but not all together. And these were programs for aircraft typically flown by owner pilots, arguably emotionally skewed enthusiasts for types long since out of production, such as the original Cessna Conquest turboprops or Citation 500 series fan jets, Mitsubishi MU-2 turboprops and Piper Cheyennes. It wasn't until Nextant entered the game in 2007 with a strategy to strip Beechjets down to the bare metal and offer the 'full Cleveland' that true assembly line remanufacture was brought to business jets.

The Beechjet (and later versions known as the Hawker 400XP) is a great candidate for remanufacture. More than 600 were produced during a run that spanned

ABOVE: TEXTRON AVIATION NOW OFFERS A FULL CONVERSION PROGRAM FOR BEECHJET 400A AND HAWKER 400XP TYPES

from 1990 to 2010. The aircraft has excellent bones for a light jet. While most Beechjets on the market have between 5,000 and 7,000 hours on the clock, structurally Nextant says they could last perhaps four or five times longer. Certified to the stringent Part 25 standards, the aircraft can carry two pilots and 7-9 passengers. With four passengers it can make 1,400 nautical miles and hit 465kts. Vintage models from between 2000 and 2006 are readily available for between US\$1m and US\$1.5m.



LIFE'S A BEECH

If you were to take such an aircraft to Nextant for remanufacture as a 400XTi, US\$2.9m would buy new turbofan engines, engine nacelles, avionics, wiring and winglets. Another US\$600,000 secures a new interior and paint scheme. Over a stock Beechjet, Nextant promises a 50% range increase (to 2,003 nautical miles with four passengers), 32% better fuel efficiency and 29% lower operating costs – plus the engines meet Stage IV anti-noise requirements. The company also says that against comparable new light jets, a 400XTi costs about half as much to acquire (including paint and



THE G90XT

Nextant has attempted to replicate the success of the 400XTi with the King Air turboprop. FAA-certified in November 2015, the G90XT was recently updated, with its new cabin shown at NBAA 2016.

Three interiors are available. Sticking with the 400XTi formula, a new composite shell boosts cabin height and width. There is also an acoustic package that Nextant says reduces noise by 50%; an environmental system designed to improve cooling on the ground; a fully articulating seat; LED lighting; and light controls at each seat.



LEFT: THE 400XTI, A BEECHJET REBUILT BY NEXTANT, COMES WITH A TWO-YEAR WARRANTY



interior), cruises marginally faster, and has lower per-mile operating costs.

INSIDE STORY

Inside, an original Beechjet already has much to recommend it, including a flat floor and a squared oval fuselage designed to give passengers more shoulder room. Stock cabins are 4ft 9in tall, 4ft 11in wide and 15ft 6in long, with a 26.4ft³ external luggage hold. The pressurization system maintains a sea level cabin up to 24,000ft.

In Nextant's version, the seat foam and coverings, headliner, window lines, drink rails, sidewalls, carpeting and veneer are all replaced. Various floorplans are available, but 90% of the 70 remanufactured to date have shared just one. It features a forward three-place divan opposite a galley followed by a club-four setup and then the lav, which is expanded by 4in. Below-divan stowage provides a place to stash the life raft. The standard revised galley has room for dual hot cup containers (from Midwest Aircraft Products), dual ice containers, waste containers and storage for refreshments. Customers can specify additional optional equipment including an espresso machine, warming ovens and microwaves. One Chinese customer ordered a rice warmer.

"The most consequential thing we did was throw out the original

interior shell," says Jay Heublein, vice president at Nextant. "By adapting new acoustic and thermal insulation materials, where there used to be a void between the material and the shell, we can now pack it all the way out against the aluminum hull. That adds about 3.5in of width at shoulder level and 2.5in of height in the seated position."

Nextant says the revised thermoacoustic blanket insulation system drops ambient noise levels by 9dB – around 50% from a standard Beechjet.

SOFA SO GOOD

Heublein also stressed the need to create the impression of openness when you walk onto the aircraft. "On the stock Beechjet, there is a seat right in the entryway, along with a bulky cabinet that you walk right into," he says. "By putting the three-place divan in, it opens up the interior dramatically and allows us to use what was a dead space. I can't put a fixed seat in front of an emergency exit, but I can put in a divan with a back that collapses."

LEDs are used for upwash, downwash and aisle lighting. "We also open up the windows," says Heublein. "By changing the way the shell overlays the window, we give the perception that the window is almost 30% bigger."

Other highlights include Scott carpeting. Most US customers opt for the Gogo Biz wi-fi solution.

FAR LEFT: ABOUT 80% OF NEXTANT'S CUSTOMERS OPERATE THEIR AIRCRAFT ON COMMERCIAL CERTIFICATES, FLYING THEM AROUND 700 HOURS A YEAR

ABOVE AND ABOVE LEFT: THE STANDARD 400XTI INTERIOR INCLUDES A NEW CABIN SHELL, SOFT GOODS, SEAT FOAM, VENEER AND DRINK RAILS

"The most consequential thing we did was throw out the original shell"



The 400XTi process takes 16 weeks – the interior accounting for 8-10 weeks of that.

FACTORY FITTING

Others have taken notice of the market for updated Beechjets. Textron Aviation offers the Hawker 400XPR conversion program, a bring-your-own-airframe, menu-driven rebuild program with extensive offerings for systems and the interior. It can be completed in stages or in unison, in as little as 12 weeks. The package includes Genuine Hawker Winglets, Williams International FJ44-4A-32 engines, and the option of retaining the aircraft’s Rockwell Collins Pro Line 4 avionics or upgrading with Pro Line 21 or Garmin’s G5000. The combination is billed as yielding a 33% range increase, along with improvements in runway and hot/high performance.

“We offer the best – and the only factory-approved – upgrade solution for Beechjet 400A/Hawker 400XP owners, significantly improving their aircraft’s performance, operating cost and resale value,” says Brad Thress, senior vice president of engineering at Textron Aviation.

Interior options include multiple floorplans and cabinetry choices including two- and three-place divans, interior shell and headliner options, many levels of refurbishment for soft goods (carpet, seating, sidewall) and hard goods (cabinetry and bulkhead), electronic window shades, LED lighting, and wired and wireless CMS and IFE.



THE TWIN OTTER X2

The Beechjet is not the only aircraft type to have received the remanufacturing treatment. For example, Ikhana’s predecessor company, RW Martin, started down the ‘re-life’ road in 1996, offering a re-life wing box. Now Ikhana offers the Twin Otter X2, a full package completed under STC.

As well as a new interior, the aircraft has new engines, avionics and wiring, and increased gross weight. The aircraft can be fully customized. All ‘fatigue critical’ components are replaced, resetting the aircraft’s usable life to a new 66,000 hours or 132,000 cycles.

avionics, new paint and a new interior. It began enrolling aircraft in the program in 2016. Customers can order items à la carte or as a package. Full-up, everything is around US\$700,000 plus the aircraft.

The interior includes a new cabin shell with recessed headliner for more headroom, a bigger forward baggage cabinet, LED/RGB lighting, electronically dimmable window shades, a redesigned drink rail, bigger window reveals, and electric window shades. Vendors can include Air Source One, AWR, Belt Makers, Booth Veneers, Dallas Airmotive, Gogo, High-Tech Finishing, JBRND, Luma Technologies, Scott Group Studio, Tapis, and Townsend Leather.

Clearly there are many options to keep the Beechjet economically viable and flying for decades to come. ⊗



FLEXIBLE UPGRADE

Meanwhile, Elliott Aviation offers the 400E package, which retains the original engines, but adds Garmin G5000 touchscreen



ABOVE AND RIGHT: ELLIOTT AVIATION BEGAN OFFERING ITS VERSION OF THE BEECHJET IN 2016