Regional makeovers find a ready market

by Kirby J. Harrison

At the time everyone seems to be looking for a bargain, regional jets reconfigured for an executive role—available at considerably less than half the price of a comparable new airplane—are being widely promoted as just what customers are looking for.

Turning regional airliners into suitable business aircraft is not a new idea. The Dornier 328 twin turboprop was a popular regional aircraft and found a ready niche as a corporate shuttle. So did the Saab 340 and Bombardier’s Dash 8, also turboprop airplanes. They were economical to operate and designed for the kind of operational frequency and short-haul mission typically required in a shuttle service.

Then jets began replacing turboprops in the regional fleets and—not surprisingly—began finding favor as well in the business aviation community. In fact, the first BAE 146 from British Aerospace (now BAE Systems) went into service in 1983, and that same year, as the Statesman, it entered service in a head-of-state configuration with the 32nd Squadron of the British Royal Air Force.

Bombardier began offering the Canadair Corporate Jetliner executive and corporate shuttle variants of its CRJ100 in 1997, followed in 2005 by the Challenger 850, the 19-passenger executive version.

Fairchild Dornier’s 328JET was introduced as the Envoy 3 in 1997, available in both executive and corporate shuttle variants. In 2005, the last year it was produced, the aircraft sold for $14.5 million in a standard executive configuration. The operator promotes the short-field capability and claims dispatch reliability of better than 99.8 percent.

The airplanes are still showing up in broker inventories. In late December, German Executive, based in Friedrichshafen, Germany, was listing three Dornier 328JETs in executive or corporate shuttle configuration. One of them was a $7.8 million Envoy 3 with extended-range fuel tanks and a “quick-change” cabin to allow the owner to switch the cabin from a 16-passenger executive configuration to a 32-passenger shuttle layout.

A New Market for Regional Redos

But only recently has the regional airline found true mass appeal in an executive role, and more than a dozen companies are directly or indirectly in the business, as brokers, completion and refurbishment centers, major vendors and service providers. An estimated 20 aircraft are expected to be delivered this year, and according to those occupied with the acquisition, sale and completion, the market can absorb that many aircraft annually, at least in the near term.

Goderich Aircraft in Huron Park, Ontario, is at work converting four Dornier 328JETs to an executive role. Two of the airplanes are destined for an undisclosed customer in the United States, and the other two are for U.S.-based corporate flight departments. In Wessling, Germany, 328 Support Services has just turned over a 12-passenger 328JET to DC Aviation of Germany. And delivered earlier from the company’s Oberpfaffenhofen Airport center was a 10-passenger 328JET for an undisclosed European customer.

Also in the works at 328 Support Services is modification of a 328JET for Austrian airline Welcome Air. The interior is being modified to accommodate six quick-change executive seats and three medevac stations capable of holding up to five stretchers, permitting Welcome Air’s partner companies, Jetlife and Jetcom, to offer the airplane for medical service flights as well as private charter.

The 328JET for DC Aviation includes 328 Support Services’ own auxiliary fuel system that will extend the range of the airplane to 2,000 nm. The Welcome Air 328JET will also get the auxiliary fuel system mod.

328 Support Services client Icetjet took its 328JET in corporate shuttle configuration to the International Travel Market show in Cannes, France, in December, and was also at the MEBA convention in Dubai. Icetjet, based in Reykjavik, Iceland, also operates a 14-passenger 328JET and is employing it out of London Southend Airport in an effort to expand operations in Russia.

In the U.S., ComTran International is also turning out executive versions of the 328JET. The San Antonio-based company recently delivered one to a Romanian customer and another to a South Texas customer. Four more are in the refurbishment process.

ComTran president Jordan Jaffe describes his company’s “Revolution Series” 328JET as “bulletproof. It comes from us with a one-year warranty on the airframe, avionics and interior, and a pre-paid power-by-the-hour program takes care of the engine.”

ComTran has “a number of 328JETs” in its inventory and does the maintenance modification from a high utilization maintenance program to a low-utilization maintenance program, as well as the interior refurbishment.

He also notes that the finished price of about $12 million includes FAA and EASA certification and a specially designed thermal/acoustic package reducing cabin noise to about 54 dB (SIL). The auxiliary fuel system is optional and the airplanes are sent to 328 Support Services in Germany for installation.

A typically equipped interior includes full-size forward galley with cloak closet, three DVD players, satellite radio, AirCell access to broadband connectivity, iPod docks at every seat, a 10-inch monitor at each seat, and two 20-inch bulkhead-mounted monitors.

The executive seats are from DeCrane Interiors, has something of a corner on European customer. Four more are in the refurbishment centers, major vendors and service providers. An estimated 20 aircraft are expected to be delivered this year, and according to those occupied with the acquisition, sale and completion, the market can absorb that many aircraft annually, at least in the near term.

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Right, a reconfigured Do 328Jet from 328 Support Services features an expanded aft lavatory. Below, the Do 328JET offers a large-cabin alternative to a new business jet of comparable size but at about one-fifth the cost.
v-p of marketing and analysis.

The BAE 146s (models 100, 200 and 300) were built earlier but nevertheless tend to have logged only about 30,000 cycles, “which is low, considering that the aircraft were designed for an 80,000-cycle limit.” In an executive role, the airplanes are unlikely to tally more than 400 cycles a year, noted Morris. As for the newer Avro RJs (the RJ70, RJ85 and RJ100), “many of them have as few as 10,000 cycles.”

“The business aviation market is starting to recognize that these airplanes are an excellent investment,” said Morris. The airframe is relatively inexpensive, “about $1.5 million to $2 million.” Maintenance, a full executive interior and fresh exterior paint give the finished Avro Business Jet a price tag of just under $10 million.

Cordner pointed out that the operating cost is also a selling point. “A charter operator of the [BAe] 146 Avro Business Jets we’ve already delivered is asking $7,600 an hour for charter, about the same per-hour rate as that of a G550.”

He also points out that the cabin of a converted 146-100-50 ft 7 in long, 11 ft 3 in wide and 6 ft 9 in high—is considerably larger than that of a G550. And the cabin of a converted Avro RJ100-66 ft 3 in long, 11 ft 3 in wide and 6 ft 9 in high—has almost twice the volume of a G550.

BAE sees the Avro Business Jet as an economical and efficient replacement for the fleets of aging BAC 111s, Tupolev Tu-134s and Boeing 727s and 737-100s in the fleets of aging BAC 111s, Tupolev Tu-134s and Boeing 727s and 737-100s in executive configuration.

BAE sells the Avro Business Jet with two auxiliary fuel system options. Adding two aux fuel tanks in the wing roots raises the volume to twice the G550.

The third major aircraft contender for the executive conversion market is Bombardier’s CRJ200 (Canadair Regional Jet), a regional airliner that entered service in 1991. Since then, Bombardier has promoted it in an executive configuration, first as the Canadair Corporate Jetliner, then as the Canadair SE (Special Edition) and most recently as the Challenger 850.

In the past two years, CRJ200s retired from regional airline service have been revised to fill a growing market niche for a large-cabin business jet at a medium-cabin price. Project Phoenix, based in Dubai, was among the first to begin marketing an executive version of the CRJ200. It was named the Phoenix CRJ. Skyserver Business Aviation of Montreal does the maintenance modifications and Flying Colours, of Peterborough, Ontario, does the interior completion work. Managing the entire process is Kevin Hoffman of Aerospace Concepts, a Montreal-based specialist in interior design, completions management and technical acceptance.

The first Phoenix CRJ will go to a client in the Macau Special Administrative Region of the People’s Republic of China. The airplane is currently at Flying Colours and delivery is expected this month.

Mike Capuccitti, president of Project Phoenix, sees the current economic situation as a contributor to the growing demand for “less expensive private jet alternatives,” such as the Phoenix CRJ. While the finished price is in the $20 million range with auxiliary fuel tanks, it’s a bargain (unless long range is a requirement) when compared to the $50 million price tag on the Global Express XRS, which has a cabin of comparable size. In fact, the fuselage of the CRJ is similar to that of Bombardier’s Global Express, Global Express XRS and Global 5000.

Regional Redo:
Regional Airliners Fly Again in Executive Service

The companies listed below are either directly or indirectly involved in the acquisition and sale of regional airliners reconfigured for executive use, or their maintenance and interior refurbishment. Others are involved as manufacturers of extended-range auxiliary fuel systems for these airplanes, and one has launched a worldwide service network for the CRJ200/100 series. Some interior refurbishment centers also provide assistance with aircraft acquisition and sales. Most of the companies involved as brokers also offer a management service for the entire process, from acquisition of the airplane to sale and customer delivery.

Roger Patron, lent new meaning to the term “bespoke cabin.” The cabin includes side-facing divans placed to enhance the view of the central 42-inch LCD monitor, an extended lavatory with Villeroy & Boch fixtures, an in-flight entertainment system from Denmark’s Bang & Olufsen, and a surround-sound package from Tenencia.

MAC is working on two more Avro Business Jets for BAE, following full maintenance workups by Infinite Engineering Services.

Canadair RJ85: Finding a Ready Market

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Reconfigured BAE 146 and Avro RJ

Origin: The BAE 146-100, built by what was then British Aerospace and later BAE Systems, was certified and entered service as a regional airliner in 1983. Later models included the 146-200 and 146-300. Production shifted to the improved Avro RJ in 1992, with three models—the Avro RJ70, Avro RJ85 and Avro RJ100. Some 387 examples of the 146 and Avro RJ were built. The airplane is available through BAE Systems as the Avro Business Jet.

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<th>Cost, basic aircraft:</th>
<th>$1.5 million to $2 million *</th>
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<td>Cost, finished aircraft in executive configuration:</td>
<td>$8 to $11 million **</td>
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Cabin size:
- 146-100 and RJ70: 50 ft 7 in long, 11 ft 3 in wide, 6 ft 9 in headroom
- 146-200 and RJ85: 58 ft 5 in long, 11 ft 3 in wide, 6 ft 9 in headroom
- 146-300 and RJ100: 66 ft 3 in long, 11 ft 3 in wide, 6 ft 9 in headroom

Range with aux fuel tanks (all models): 1,100 nm
Range with 2 aux fuel tanks (all models): 1,800 nm
Range with 4 aux fuel tanks (all models): 2,500 nm
Max cruise speed: 404 knots

* Depending on condition and whether it is a 146 or Avro RJ.
** Includes maintenance from a high-utilization program to a low-utilization program, interior completion and exterior paint.

Reconfigured CRJ200

Origin: Built by Bombardier Aerospace as the Canadair Regional Jet (CRJ), the aircraft was certified and delivered to the first customer in 1991. Other variants include the CRJ100, CRJ700, CRJ900 and most recently the CRJ1000. All CRJs are derivatives of the original Challenger 600 airframe. A total of 1,200 CRJ200s were produced.

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<th>Cost, basic aircraft:</th>
<th>$6 million to $12 million *</th>
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<td>Cost, finished aircraft:</td>
<td>$14 million to $19 million **</td>
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Cabin size, CRJ200: 40 ft 6 in long, 8 ft 4 in wide, 6 ft 1 in headroom
Range without aux fuel tanks: 2,300 nm ***
Range with aux fuel tanks: 3,000 nm ***
Max cruise speed: 464 knots

* Depending on condition of aircraft and total hours.
** Depending on maintenance requirements, sophistication of interior and auxiliary fuel system.
*** Depending on weight of cabin completion.

Reconfigured Dornier 328JET

Origin: Launched by Fairchild Dornier as a regional airliner, certified and delivered to the first customer in 1999. Fairchild Dornier began marketing the 328JET version of its 328JET twin turboprop in 2001 as the Envoy 3 and began deliveries of the 12- to 14-passenger twinjet in 2002. A total of 111 328JETs were built.

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<th>Cost, basic aircraft:</th>
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<td>Cost, finished aircraft:</td>
<td>$10 million to $12 million *</td>
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Cabin size: 33 ft 10 in long, 7 ft 2 in wide, 6 ft 2 in headroom
Range without aux fuel tanks: 1,500 nm
Range with aux fuel tanks: 2,100 nm
Max cruise speed: 405 knots

* Depending on condition of aircraft and total hours.
ultra-long-range aircraft capable of flying 5,000 nm and (in the case of the Global Express and XRS) 6,000 nm nonstop, while the converted CRJ—even with extended-range fuel tanks—could be expected to fly no farther than 3,100 nm nonstop.

There is also the matter of speed. The CRJ200 has a max cruise speed of Mach 0.81, while the max cruise speed of the Global line is about Mach 0.88, an advantage of about 45 knots.

Capuccitti contends that the extreme long range of the Global is perhaps overrated. The average mission for the Global Express fleet is about 2.5 to three hours, he explained. “This suggests that the real need is for a large cabin, not the 12- to 14-hour nonstop range.”

Bombardier’s own Challenger 850 is perhaps the closest competitor to a converted CRJ200, with similar cabin size, performance and range, but the price, at $31.82 million, is still about $12 million more.

There are about twice as many CRJ200s on the market now as a year ago, which has resulted in a softening in price for a CRJ, now ranging from $6 million to $12 million, depending on hours/cycles flown and condition. “On the other hand,” said Capuccitti, “there’s enough interest out there that the price is likely to go up.”

Flying Colours is also working on its own CRJ project, the ExecLiner. The company has already delivered its first to a client in India. The Canadian company is a partner with Maine Aviation of Portland, Maine, which is marketing the ExecLiner. One has been finished and delivered to a U.S. client and another was scheduled for delivery late last month.

Flying Colours has developed its own auxiliary fuel tank system for the CRJ conversions, giving the aircraft a range of 3,000 nm. Sean Gillespie, director of sales and marketing, said the company had submitted all the paperwork for FAA certification of the system to the latest SFAR 88 Parts A and B requirements and approval “is expected in the near future.”

Also available is an auxiliary fuel system from Elisen Technologies of Montreal, the Elisen Elite AFS 500. Elisen expects FAA certification early this year and claims it will boost the range of CRJ200 conversions to about 3,100 nm.

Elisen subsidiary MJet is an independent completion center and has already delivered a CRJ in corporate-shuttle configuration to Canadian operator Corpac of Calgary. An aircraft in executive configuration is scheduled for delivery next month. Another CRJ200 reconfiguration is in the works and yet another is scheduled to roll into the company’s Montreal center in March.

The first executive project will include the new Silentium Air SPS 360 thermal/acoustic barrier from Aviation International Management Services (Aims). The new technology can reduce cabin noise by as

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much as 30 percent, claims Aims marketing agent Zenith Jet of Montreal.

MJet president Stephane Durant said the first conversion to an executive configuration took approximately 11 months, but subsequent projects will take as little as six months.

The completion cycle time of six months appears to be consistent among all the CRJ200 conversions, as well as with those being done on the 328JET and Avro Business Jet.

If necessity is the mother of invention, then market demand gives birth to competition, and there’s no lack of competitors looking for a share of the regional airliner reconfiguration business.

Tailwind Capital of Redmond, Wash., started by acquiring five CRJ200s in 2007, acting as an agent to manage the acquisition, maintenance, interior completion, certification and sale of what it has named the Hemisphere 200XR.

The first 200XR is scheduled for delivery late next month following interior completion work at the DeCrane Aerospace Pats Aircraft Completions facility in Georgetown, Del.

According to Tailwind president Joel Hussey, Pats is seeking an amendment to an existing auxiliary fuel system that will allow for FAA certification by “February at the latest.” As with other auxiliary fuel systems, the Pats package extends the aircraft’s range to about 3,000 nm.

An issue no less important than auxiliary fuel system certification is the question of a European Aviation Safety Authority (EASA) requirement for a 16-g floor. “We went back and added some floor structure in that first Hemisphere,” said Hussey, despite some confusion about whether the requirement was actually applicable.

JetCorp Technical Services, a St. Louis-based independent maintenance and refurbishment center, recently delivered its first two “Renaissance Series” CRJ200 conversions and president Bill McLendon also took note of the issue, and questions whether EASA does indeed require that the floor in the CRJ200 conversions meets 16-g standards. “We’ve had a lot of different opinions,” McLendon said. “So far, nobody has come up with a definitive answer.”

Also in the water and making a splash is Chatham Aviation. With UK-based broker Freestream Aircraft as its worldwide marketing agent, Chatham is selling the Chatham 3100 as its executive variant of the CRJ200.

MJet is working on the interior completion of the first Chatham 3100, with delivery scheduled for next month. Chatham Aviation is offering it at a price of $19.9 million, including auxiliary fuel tanks from Elisen Technologies.

Field Aviation of Calgary, Canada, has done a CRJ200, five CRJ700s and is in talks to convert “a number of CRJ900s” to executive or corporate-shuttle configuration.

Dave Jensen, the company’s v-p of business development, said the CRJ series is ideal for a corporate shuttle role, in which the airplane might be expected to total 600 flight hours a year. “The typical business jet is not designed for that kind of use. The CRJ, on the other hand, was designed for 2,500 hours a year.”

Field Aviation has locations in Calgary, Montreal and Toronto and provides a broad range of aviation services, from aircraft acquisition and sales to maintenance, repair and overhaul to interior completion and refurbishment. However, said Jensen, the company has not gone into the business of acquiring CRJs for conversion and resale but has been dealing directly with customers who have already acquired the aircraft.

Like some other completion centers, Field can perform the necessary maintenance on CRJs before the interior
reconfiguration.

Comlux Completion USA (formerly Indianapolis Jet Center) has done one CRJ200 reconfiguration and, according to executive v-p Randy Keeker, is negotiating to do several more this year. The first, delivered late last year, went to a corporate customer in the People’s Republic of China.

Keeker estimates that at any time there are between a dozen and three dozen former airline CRJs in the pre-owned aircraft inventory, available for $7 million to $10 million.

Capital Aviation, at Wiley Post Airport in Bethany, Okla., “has all the pieces in place” to do CRJ reconfigurations, according to v-p of sales and marketing Larry Price. The company has considerable experience with Challenger interiors and holds STCs “that will fit the CRJ200 with only minor changes.”

Pats Aircraft Completions is working on a CRJ200 conversion for Tailwind that includes the Pats auxiliary fuel system.

In the past year, Pats has shifted its focus away from one-off green completion work to concentrate on its core competency areas, according to John Martin, the company’s new v-p and general manager. These are fuel systems, BBJ extended-range fuel tank installations and interior completion of Embraer’s new Lineage 1000.

At the same time, Martin does not rule out doing more CRJ200 interiors and aux fuel tank installations. Like the Lineage 1000, he explained, the CRJ200 conversion represents what might be described as a serial green completion that does not consume an inordinate number of resources, unlike a one-off job.

Indications are that the business of reconfiguring regional airliners for use in an executive role has a bright future, at least in the short term. If the prime driver is a large-cabin private jet at less than half the cost of a new airplane of comparable cabin size, a faltering worldwide economy and lending crisis isn’t hurting either.

Finally, a number of those involved in regional redos are considering adding yet another airplane—perhaps two, Embraer’s ERJ 135 and ERJ 145—to the list of choices. The ERJ 135 is the basic platform for the Brazilian manufacturer’s Legacy 600 and seems less likely. But the 145, with the same fuselage cross-section, has a cabin that is 54 ft 1 in long, 6 ft 11 in wide and offers six feet of headroom.

Pricing is a bit vague, but one 2004 ERJ 145 converted for corporate use and carrying a total of 4,358 cycles and 4,426 hours was listed for sale on the Internet for $18.15 million.

Stephane Durant at MJet said the company is considering transfer of the CRJ200 technology to another platform and is eyeing the ERJ 145. He noted, “We have an ERJ 135 in the house being done as a corporate shuttle and there are discussions with one customer for an executive conversion of several ERJ 145s,” adding that the latter is “about the only regional jet not yet being promoted as a candidate for reconfiguration to a corporate role.”

Maybe, but based on growing demand for the 328JET, the CRJ200 and BAE 146 and Avro RJ, it won’t be long before someone offers it as an executive transport.