dential joint project which will be disclosed later this year," he said. Airbus is enlisting a partnership agreement with AVIC that could be centered on upgraded versions of in-production aircraft such as the A300-600 and A310 twinjets. "We are impressed by the skills and business sense of our Chinese partners," Forger said.

In addition to the revised Industrial Agreement with AVIC, Airbus is now expected to seek initiatives that could bring Airbus closer to the consortium. Alenia was set to become a major partner in the ill-fated A31X but is not involved in the A318. Italy is participating in the high-capacity A340-500/600 long-range transports and is "very close" to the proposed 480-656-seat A3XX. But Alenia maintains strong business links with Boeing. "This is a problem that still has to be resolved," Forger said.

CPMI last week launched the TSH56 technology acquisition program, which is expected to pave the way for the CFM56 family's successor. No time frame has been finalized yet for the envisioned all-new product range. The planned 20,000-35,000-lb.-thrust engines will use high-speed low-noise fan blades, a "low-cost" combustor and are expected to produce lower specific fuel consumption as well as lower emissions than in-production turbofans, company officials said.

Bombardier Plans 90-Seat Jet For Robust Regional Market

JOSEPH C. ANSELMO/FARNBOROUGH

Bombardier Aerospace unveiled a plan to develop an all-new 90-seat regional jet and rival Embraer announced about $1.5 billion in firm orders for its RJ-145 and RJ-135 jets at the Farnborough air show.

Forecasting robust demand for regional aircraft larger than its new 70-passenger Canadair Regional Jet (CRJ) Series 700, Bombardier executives said the company has begun preliminary development work on the 90-seat BRJ-X.

They have set a goal of making a firm go-ahead decision on the BRJ-X within one year and completing development within 36 months, allowing certification in 2003.

Bombardier executives say the BRJ-X would fill a niche between 70-seat regional jets and two new 100 passenger "mainline" turboprops, the Boeing 717 and the Airbus 318 (see p. 26). But competitors are also targeting new aircraft for the same market segment. For example, British Aerospace's new 70-110-seat Avro RJX family is slated for certification at the end of 2000, while Fairchild Dornier's proposed 90-100-seat 928JET could be certified as early as 2003.

The BRJ-X would have a 128-in. cross section, seating five abreast, and a new wing with under-the-wing engines (see drawing, p. 26). Bombardier is seeking a powerplant in the 20,000-lb.-thrust range. The basic design foresees a stretched fuselage, 110-seat derivative.

Chairman/CEO Laurent Beaudoin said development of the BRJ-X is projected to cost €31 billion ($650 million). Yet-to-be-announced risk-sharing partners would fund a significant share of the investment as was done with development of the CRJ-700, which is scheduled for certification in early 2001.

American Eagle's firm order of 75 Embraer RJ-135 regional jets was the largest-ever single order for the new 37-seat derivative, shown at Farnborough.

Bombardier executives forecast aircraft with more than 60 seats will make up 22% of regional fleets within a decade, up from 10% today. They project the overall number of regional aircraft will grow to 10,700 worldwide over that same period, up from 7,800.

Bombardier received orders this month for 34 CRJ Series 200s and 700s worth more than $700 million. But Embraer was the clear winner at Farnborough in terms of new order announcements. The Brazilian manufacturer announced firm orders here for 32 50-seat RJ-145s and 77 RJ-135s, the new 37-seat derivative of the 145 slated for certification in mid-1999 (AWE:57 May 18, p. 39).

The orders included a huge win from American Eagle, which placed a firm buy for 75 RJ-135s and took options for 75 more. The order was valued at about $1 billion, not including options. It boosted Bombardier's backlog of firm orders to more than $4 billion.

American Eagle plans to base the new RJ-135s at American Airlines' hub at Dallas/Fort Worth. Deliveries are due to begin next summer, according to Embraer President/CEO Mauricio Botelho.

American Eagle had previously ordered 42 RJ-145s, and the RJ-135 was widely viewed as a likely choice for a smaller jet because of its 90% commonality with its larger counterpart. American Eagle also looked at Fairchild Dornier's 328JET, but the RJ-135 won out because of commonality, higher speed and longer range, according to an American Eagle official.

Earlier this year, the 328JET lost a major competition to Embraer when Continental Express—the key launch customer for the RJ-145 at the 1996 Farnborough show—opted to buy 25 RJ-135s to complement the 50 145s it has ordered. Fairchild Dornier executives said they were not surprised American Eagle opted also for the RJ-135. "If someone invests in the 145, you have to have a very, very compelling reason why you wouldn't take
the 135, " Chairman/CEO James A. Robinson said.

Embraer also announced new firm orders for two RJ-135s from France's Airline, two RJ-135s from Australia's National Jet Systems, and five RJ-145s from Luxembourg's Luxair. Embraer's backlog now stands at 145 firm orders and 194 options for the RJ-135 and 207 firm orders and 219 options for the RJ-145.

Bombardier's recent CRJ sales included an order from Atlantic Southeast Airlines for 12 70-seat CRJ-700s and 15 50-seat CRJ-200s; Midway Airlines ordered seven CRJ-200ERs. Midway is to receive all of its aircraft in 1999. Deliveries of Atlantic Southeast's 50-seaters are due to begin in February 2000, with delivery of the 70-seaters starting in late 2001. The orders raised Bombardier's backlog of CRJs to 159.

In other regional aircraft developments at Farnborough:

- Fairchild Dornier announced finalization of the configuration of its expanded product range, which is expected to include the 55-63 seat 528JET, 70-78 seat 728JET, and 90-100 seat 928JET. The company narrowed the jets' fuselage diameter by 6 in. to 128 in., in response to a request from potential launch customer Lufthansa CityLine. "If you look at the marketplace below 100 seats, certainly the 50-seat [segment] is saturated, but everything above and below that is virgin territory," said Robinson.

- Fairchild Dornier also announced supplies for the new jets. Honeywell Inc. has been chosen to supply the Primus Epic avionics suite; AlliedSignal will supply the environmental control system and the auxiliary power unit; BFGoodrich will be responsible for the landing gear, wheels, tires, brakes and fuel system; Lucas Aerospace will supply flight controls; Sunstrand Aerospace will provide the integrated electric system, and Parker Aerospace will supply the hydraulics. Fairchild Dornier had previously announced the selection of General Electric's CF34-8D engine for the new jets.

- Bombardier executives expressed faith in the viability of regional turboprops despite the migration of some regional operators to jets. The company spotlighted its "Q" (quiet) series of Dash-8 twin turboprops, which are being advertised as the quietest and most vibration-free passenger cabins of any propeller-driven aircraft. "There is and always will be a solid role for turboprops," said Robert D. Gillespie, president of Bombardier's Regional Aircraft Div., especially when the "spike" in regional jet orders comes to an end.

- Embraer executives continue to look at options for larger follow-on jets, but expressed concerns about a glut of suppliers for 70-seat and above aircraft. They said the company is concentrating on ramping up its production line, which is being increased from three aircraft per month in December 1997 to six per month today and 12 per month by September 1999.

- Regional executives shrugged off the financial crisis in Asia, noting the bulk of the market is in North America and Europe. But they said recent economic slowdowns in Latin America and the potential of a slowdown in the U.S.—which accounts for 60-70% of the world's regional aircraft market—are cause for worry.

Buying Spree Hits Farnborough

MICHAEL MECHAM/FARNSBOROUGH

Orders across their product ranges flowed in for Airbus and Boeing at the Farnborough air show—nearly $7 billion in total—to add to their already record-setting backlogs. How long these good times might roll on, however, was a matter of opinion.

Boeing received more aircraft orders. 86 firm with 16 options, but the total value of its list, at $6.75 billion, was smaller than Airbus'. Its list of 79 firm and 50 option orders was officially worth some $12 billion, although it included six firm orders from Emirates for A340-500s with 10 options with a total value of $9.4 billion. All but four of the optional aircraft, which will be powered by Rolls-Royce Trent 500 engines, were previously carried on Airbus books as "undisclosed."

Amidst the plenty, the manufacturers also signaled—in theory at least—that it is time to pay more attention to profits than market share. Airbus announced a 3% rise in aircraft prices, which followed Boeing's decision to increase prices by 5%, which it said was its first in 23 years.

Whether airlines—major ones, at least—will ever pay book value for new aircraft is another matter. Both manufacturers said their offer was lower than the other's in the recent $8.5-billion British Aerospace order in which the A320 suppli-