

Aircraft development round-up

Four manufacturers are promoting their 70-100-seat jet projects. Two have secured launch orders. Will there be enough room for another two, or just one?

Fairchild 728Jet

Although officially launched in May 1999, industry opinion has been sceptical that the 728Jet would ever go beyond the project stage. These opinions have been tempered, although not entirely overturned, by Lufthansa's firm order for 60 plus 60 options.

Fairchild has also announced that it has sold 28 examples of the 728Jet corporate derivative, the Envoy 7.

Funding for the 728Jet will come from a mixture of sources including state loan guarantees, local government loan guarantees and early payment from Lufthansa. It is an unusual situation, since the company is largely owned by US interests but is receiving German government investment.

Local government funding from the state of Bavaria is presumably linked to the creation of local jobs. In reality, locally available skills and experience are not necessarily the ones required. How will Fairchild balance the political need for local job creation and the practical need for experienced staff? Over the past year the company has recruited a large number of senior management staff but few, if any, appear to be German nationals, let alone Bavarians.

Lufthansa itself is more than just a launch customer for the aircraft, since it will receive a royalty on all future aircraft

it sells. In addition, Lufthansa is believed to be providing larger than normal deposits and progress payments, which will be used to finance project development.

Obstacles

The biggest technical challenge will be in designing the wing, a task that has been passed on to CASA of Spain. Very few aerospace companies have the experience to do this, although CASA did manufacture the Saab 2000's wing. The biggest financial challenge will be to cover the costs of an expanding workforce before any substantial revenues start to flow.

Keeping promises

When the project was launched in May 1998 it was going to have a list price of less than \$20 million, be available from July 2001 and development costs were estimated at \$500 million. A little over a year later the price appears to have increased to \$27 million, deliveries will now commence in 2002 and development costs are put at \$1,200 million.

The economics of the 70-100 seat aircraft were compared assuming prices of \$19.5 million for the 728Jet, \$25.9 million for the RJ85 and \$27.4 million for the RJX85 (see *What is the market for 70- to 110-seat jets?*, page 51, *Aircraft*

Commerce, May/June 1999). Fairchild's announcement valued the order for 60 firm 728Jets at \$1.6 billion, or nearly \$27 million per aircraft. At this price the 728Jet's advantage in seat-mile costs over the RJX85 is reduced from the previous 15% to nearer 5%. Lufthansa is presumably gaining a discount for being a launch customer, so what will be the price to subsequent operators? Since BAe has already written down the development costs of the Avro RJ family, and AlliedSignal will be paying for the costs of developing the RJX, BAe will have much greater freedom to compete on price.

Embraer ERJ-170

Crossair launched the ERJ-170 family with an firm order for 60 plus 100 options. The airline has actually ordered 30 ERJ-170s and 30 ERJ-190-200s. The latter is a stretched development of the original ERJ-190 to accommodate further three-seat rows.

The selection of the Honeywell EPIC avionics system maintains supplier commonality with the existing ERJ-135/145, but selection of the CF34-8/-10 powerplant is a less obvious choice. During the past year of project talks on the Fairchild 728Jet, one of the disagreements between Crossair and Lufthansa was that Crossair favoured the all-new SPW14 engine over the CF34-8.

The rumour is that in exchange for giving General Electric a monopoly on all three 70-seat twinjet programmes (the CRJ-700, ERJ-170 and 728Jet), GE will take back all Crossair's Saab 2000s.

Crossair appears to have relented on the subject of airfield performance. The airline has now stated a need to retain a

minimum of seven Avro RJs to serve London City, Lugano and Florence. This might even extend to participation in an RJX engine retrofit programme.

The ERJ-170 will apparently be suitable for these small airport operations, but the ERJ-190-200 will not. Crossair would have to accept significant payload restrictions with the ERJ-190-200; 70 versus 100 seats to replace its Avro RJ100s.

Crossair's 100 options are intended to meet the needs of other Qualifyer group airlines. This includes Air Littoral, AOM, Austrian, Crossair, Lauda Air, Sabena, Swissair, TAP Air Portugal, Turkish Airlines and Tyrolean. Considering the fleets of these airlines and their announced re-equipment plans, those most likely to be taking up any of these options are Air Littoral, Austrian/Tyrolean and Sabena/Delta Air Transport. Swissair owns 49.5% of Sabena, the largest European customer for the Avro RJ.

Good news

Having four manufacturers in the 70-100 seat market can only be good news for the world's regional airlines. These airlines were created during a period of 'over competition' between manufacturers during the 1980s and early- to mid-1990s.

Probably the worst example of excessive competition was in the 30-seat category in the 1980s, which saw three separate turboprop programmes: the Dash 8-100, Brasilia and Saab 340.

Even more followed in the early 1990s with the launch of the Jetstream 41 and the Dornier 328. The result was massive price discounting and a huge number of aircraft left on manufacturers' balance sheets.

The late 1990s introduced a wholly different order, with the core 50-seat jet market only contested by two manufacturers: Bombardier and Embraer. The results have been positive for the manufacturers. Both are profitable and in good enough financial shape to expand their RJ families.

However, the airlines have seen prices harden and lead times extend out years ahead. Operating leases direct from the manufacturer, once common, are now a memory. With demand high manufacturers can find organisations more than willing to finance acquisition of these aircraft and lease them.

Prior to Lufthansa's commitment to the 728Jet, there were only three aircraft in the 70-110 seat market: the CRJ-700, RJ85 and RJ100. With the addition of the Fairchild 728Jet and 928Jet, the Embraer ERJ-170, ERJ-190 and ERJ-190-200 there are now eight.

Bad news?

Bombardier has not only lost its monopoly in the 70-seat regional jet market, but has also lost its most important non-US customer, Lufthansa Cityline.

There can be little doubt that both the ERJ-170 and 728Jet can overcome all of the weaknesses of the CRJ-700. The ERJ-170 and 728Jet will offer roomier cabins with more cabin amenities, making them more attractive to the European market.

Of the 96 firm orders for the CRJ-700, 82 are from the US, which highlights how important this market is to the 70-seaters. Fortunately, the US has never been quite so orientated towards passenger comfort as has Europe, with everything driven by economics.

A combination of the existing customer base, a strong parent and respected product support should ensure that Bombardier will continue to be a competitive force in the north American market. Embraer has less of a US presence but the customers it has are the biggest in the industry: American Eagle and Continental Express. Bombardier, however, has already sold 25 CRJ-700s to American Eagle.

Bombardier is now faced with strong competition in Europe and the rest of the world. North America is still relatively secure. Since Bombardier's development costs for the aircraft will have been substantially less than those of the all-new Embraer and Fairchild designs, Bombardier should be in a position to be very competitive on price.

Bad news for Avro

In the space of a few weeks Avro has lost two of its prime European customers, both of which under normal circumstances would have been prime candidates to launch the Avro RJX. However, the company has little to fear immediately; the first ERJ-190 will not be available prior to June 2004 and the first 928Jet is currently scheduled to enter service in 2003. Subject to final launch the RJX is scheduled to enter service mid-2001.

The combined Crossair/Lufthansa orders will place a large number of Avro RJs on the market over a limited time period. Obviously this will not happen until deliveries of the new aircraft begin to flow, but from then on Avro will have to compete with a large number of used aircraft. Assuming that Crossair retains seven aircraft for its performance restricted airfields then up to 31 aircraft may become available.

BAe is currently in a dilemma. A number of customers have expressed strong interest in the RJX, but many are existing BAe 146 operators. BAe Asset Management has successfully placed nearly all excess 146 capacity and is reluctant to lose airlines that are among its best customers.

Non-146 operators want BAe to make a significant commitment to the regional market. Overall there are indications that given a more open hand with existing BAe 146 operators and a commitment to increase production 'significantly' beyond 18-23 aircraft a year, several large launch orders could be placed. **AC**

While some airlines have expressed an interest in the Avro RJX, BAe has lost two of its most important customers in the space of two weeks. Some are still sceptical, however, about the reality of the 728Jet.

