The annual financing requirement for regional aircraft deliveries has steadily grown with the regional jet phenomenon to $12 billion. This could grow further if the 70- to 110-seat jet market grows as anticipated. In parallel with this expansion the credit quality of airlines has improved, making it easier to finance aircraft.

Financing $12 billion of regional aircraft

Regional aircraft financing requirements are escalating as manufacturers increase production to meet demand. Airlines, particularly in the US, are reluctant to finance aircraft internally, with the result that the majority of financing is from external sources.

Production

It is first necessary to have an understanding aircraft production and their pricing. Future annual production of regional aircraft has been estimated, based on a combination of current and announced production rates. List prices have been discounted by 20%.

ATR has reduced production rates to about 30 aircraft each year, and it is assumed this will be maintained. BAE Systems continues with its policy of RJX sales to blue chip customers, and annual production will be maintained at 18 aircraft. Despite scepticism for the the 19-seater market, Raytheon recently announced it was increasing Beech 1900D annual production from 30 to 42.

In the wake of substantial orders from US regionals, Bombardier announced an increase in its monthly CRJ200 production rate from 12 to 14 aircraft.

Production of Bombardier's Q100/Q200/Q300 continues at about two aircraft per month. The new generation Q400 is currently running at a higher level in order to catch up with a delivery backlog, but a sustained annual rate of 24 aircraft is assumed.

Embraer has also increased production. It was looking to increase production of the ERJ-135/-140/–145 to 24 a month, but announced production would peak at 20 aircraft a month, and then remain flat. ERJ-170 production rates are expected to reach four aircraft a month by 2004, with a nominal capability of six a month available.

Fairchild Dornier is currently producing about four 328Jets a month, while 728Jet production has been laid out at six aircraft a month, with potential to increase this to 12.

With annual production of some 768 regional aircraft, the annual financing requirement is in excess of $12 billion. This compares with an average annual requirement for commercial jet airliners of about $55 billion *(see Financing options for blue chip airlines, page 6).*

Markets

Examining geographic distribution of future orders suggests that of the total estimated financing requirement of $12 billion, about $6.9 billion will be required in the US, $4.1 billion in Europe and $1 billion in the rest of the world *(see table, page 40).*

Of this total, just over $4 billion is allocated to the unproven 70- to 110-seat market. If this market does not develop as fast as anticipated, then the financing requirement will reduce accordingly.

Operating leases (short-term)

Although there are obvious benefits in terms of fleet planning flexibility and off-balance sheet financing, the real growth of short-term operating leases in the regional market was caused by necessity.

This is due to developing regional airlines not obtaining cost effective financing and the problems manufacturers had placing aircraft. Neither problem applies in the regional jet era, since the manufacturers cannot build them fast enough and, in general, the airlines that operate them are among the most profitable and well managed in the industry. Many are subsidiaries of major mainline carriers, and these airlines have been able to obtain financing.

"Many regional airlines do not need the flexibility of short-term operating leases," explains Neville Taylor, vice president structured finance, Bombardier Regional Aircraft. "Operating leases are more popular where there are no tax incentives. The majority of regional aircraft deliveries, 65%, are in the US, and the US still has substantial tax benefits. It is difficult for lessors to compete with leverages leases since they have a 20% present value benefit. Regional airlines also need aircraft over the long-term, and this increases the efficiency of the leveraged lease. This contrasts to major carriers, which require the flexibility of short-term operating leases. Regional carriers need regional jets for long-term periods, since there is a shortage. Operating leases are used more commonly where finance leases are technically or legally more difficult, for example in South America."

Only GECAS has opted to involve itself in the 50-seat regional jet business. It has an order for 15 CRJ200s as part of its package of 50 CRJ200/700/900 aircraft. Based on current sales of 1,797 30-50 seat regional jets, a total of 15 sales to operating lessors is in stark contrast to the high proportion of larger narrow-bodied jets leased by such organisations.

An earlier attempt to offer regional jets on the operating lease market was conspicuously unsuccessful. In June 1998 Wexford Management entered the headlines when it placed orders for twenty ERJ-145s (and a further 20 options), with the intention of offering them for operating lease. In a rare

ANNUAL REGIONAL AIRCRAFT DELIVERIES & FINANCING REQUIREMENTS

Aircraft category	30-50 seat RJ	70-110 seat RJ	Turboprop	
Aircraft orders				
USA	71%	45%	25%	
Europe	20%	54%	46%	
Rest of World	9%	1%	29%	
TOTAL	**100%**	**100%**	**100%**	
Financing requirement-$ million				
USA	4,707	1,892	293	6,892
Europe	1,326	2,270	540	4,136
Rest of World	597	42	340	979
TOTAL	**6,630**	**4,204**	**1,173**	**12,007**

example of failure in the regional jet story, the company failed to place a single aircraft on lease until its parent company acquired Chautauqua, with whom all 45 aircraft will be placed.

GECAS has still taken the bold step of ordering large numbers of all the competing twinjet types in the 70-110 seat jet market (25 Canadair CRJ700s, 10 CRJ900s, 50 Embraer ERJ-170s and 50 Fairchild Dornier 728Jets). GECAS also has 100 options with each of the three manufacturers.

"GECAS is the only lessor with a substantial portfolio, and will lease the aircraft on their own probably with terms in the 5-10 year range," says Taylor. "While it may be hard to compete in the US with leveraged leases, it can probably place the aircraft elsewhere. GECAS does have good delivery positions so it may be able to place aircraft on short-term leases with airlines desperate for capacity".

A smaller player in this market is Bavaria International Aircraft Leasing, which ordered four 928Jets and two 728Jets. These two lessors hold 30% of the orders for these new generation jets.

Operating leases (long term)

Long-term operating leases are the most popular form of financing for regional airlines in the US. These retain the advantage of off-balance sheet treatment. These will be financed with US leveraged leases, and leased on under operating terms to the airlines. Lessors will pass on the tax benefits to airlines through lower lease rentals. Lease terms will usually be in excess of 15 years.

Capital markets

As with the rest of the commercial aviation world, the regional market is seeing an increasing trend towards obtaining funds from the capital markets, pension funds, bonds and unit trusts. Predominantly used by US airlines, these funds are obtained against securitisation packages, ticket receivables and Enhanced Equipment Trust Certificates (EETC's).

The advantages of securitisations are low cost of funds and the ability to source large amounts of capital in a single transaction. The disadvantages are they only work with large packages of aircraft, and so not easily applicable to smaller carriers. They also require a credit rating from one of the rating agencies, which many smaller and non-US carriers lack. In the absence of the equivalent of the USA's Section 1110 bankruptcy protection, the risk will be factored into the pricing and the major attraction is therefore lost.

The result is that while American, Continental, Delta, United and US Airways have all sourced finance from the EETC market (not necessarily for regional aircraft), these transactions are far harder to complete outside the US, even for larger operators, and completely out of the question for smaller carriers.

Government support

In the wider aviation market, government financing support is primarily available through the Export Import Bank of the US (Exim) and the three major European export credit agencies, the Export Credit Guarantee Department (ECGD) in the UK, Hermes in Germany and Coface in France.

These organisations provide guarantees in the event of a default. They normally cover exports to developing non-OECD countries where credit risk is high, and so have little application in today's regional jet market.

The US does not have a significant manufacturing presence in the regional market. With the decline in Europe's regional manufacturing industry, the European agencies have become increasingly concentrated on the Airbus market. ATR will probably need to make increased use of Coface as its market moves towards the developing nations.

PROEX

The most widespread application of government financing support is from the Brazilian Government and PROEX (Programa de Financiamento as Exportacoes). This is simply a series of payments to help subsidise high domestic interest rates. Prior to the World Trade Organisation's (WTO) involvement, PROEX was available for up to 15 years and on 100% of the acquisition cost. The operator can receive the payments over the 15 year period, but since many operators perceive a risk in the continued availability of PROEX, many now prefer to receive this benefit as an up-front lump sum. This lump sum also provides a very convenient source of equity for longer term financing, and so encourages outright sales.

"Canadian" PROEX

In January 2001, having seen two WTO rulings against Brazil but little change in the application of the PROEX subsidy, the Canadian Government decided to act. It announced plans to support overseas orders for Bombardier aircraft by offering terms equivalent to the latest version of PROEX. The first recipient of this support is Air Wisconsin, which is believed to have secured low rate financing on up to 75% of its $1.7 billion order for 75 CRJs.

Brazil has subsequently made a complaint to the WTO about the Air Wisconsin deal, but whatever the WTO's ruling, Canada cannot lose. The most likely scenario is that the WTO will declare the support to Air Wisconsin illegal, but then will also be judging on PROEX. In the event that Air Wisconsin's

The majority of US regionals are now owned by their major affiliates. These mainline carriers are able to get favourable financing terms, and use vehicles such as as leveraged tax leases, or make cash purchases and subsequently sub-lease the aircraft to the regional partners.

funding is accepted, at least the playing field will be level, although distorted equally by both sides.

Manufacturer support

While lenders' enthusiasm to support financing of the Canadair CRJ and Embraer ERJ-145 family continues, the needs of the less popular types remain the niche of specialist suppliers with a large degree of manufacturer support. Types include the ATR42/72, BAE Systems RJ/RJX, Beech 1900D, de Havilland Canada Dash 8 and Fairchild Dornier 328Jet. Manufacturer support may be temporary, while the operator sources longer-term finance. In some cases assistance may be on a longer term basis in the form of residual value guarantees.

A manufacturer offering financing support can control a market and this is well demonstrated by Raytheon. Sales of the Beech 1900D were supported with financing provided by Raytheon Credit Corp. In the absence of such financing it is unlikely that there would have been so many takers for $5 million 19-seaters when there was a glut of low-time used aircraft.

Turboprop financing

One difficulty faced by turboprop manufacturers is their prospective customer's ability to finance aircraft. It is a specialist lender that will want to get involved in turboprop financing.

A good example of the difficulties faced by the turboprop manufacturers is demonstrated by ATR's experience in placing eight ATR72s with Jet Airways of India. ATR had to find investors willing to purchase the aircraft to be able to structure an operating lease. The first five were sold to Aircraft International Renting Ltd, the majority shareholder of which is the TAT Group, and a further three to Safair.

These transactions involved the ATR72-500, the most popular turboprop on the market. In comparison, the Q400 faces a larger problems. It lacks an established order book and an obvious market niche. Rumours that SAS recently threatened to cancel its orders and send the delivered aircraft back to Bombardier do little for investor confidence.

Such sales could be backed with manufacturers' residual value guarantees to the lessor, which remove the long-term risk, although the lessor would still be responsible for the operator risk. The turboprop market will move away from the US and Europe to developing nations like India that will form the major market. With a combination of equipment, credit and country risk this is a rather specialist part of the overall regional aircraft finance market. It is likely to appeal to a few specialist organisations, with the manufacturers remaining closely involved.

US market

Predicting how new production regional aircraft are going to be financed is largely a question of who is going to finance the large fleets of Canadair RJs and Embraer ERJ-145s for the US market. These will form the bulk of deliveries for the foreseeable future *(see table, page 40)*.

Alaska Air Group's Horizon Air leases the majority of its fleet. As of 31st December 2000 all 40 of Horizon's Dash 8 fleet were on operating lease, as were 13 of its F28s. The only owned aircraft were nine F28s. Horizon Air is tied exclusively to Bombardier for its future aircraft, with 30 CRJ700s and 15 Q400 turboprops on order.

American Eagle is the exception rather than the rule in that it owns, through its parent AMR, the majority of its own fleet. As of 31st December 2000, American Eagle's fleet of 261-strong fleet comprised 165 owned aircraft and 57 on capital leases, leaving only 39 turboprops (ATRs and Saab 340s) on pure operating leases. The entire ERJ fleet, which numbered 83 at this time, was financed by parent AMR through secured debt arrangements. Despite AMR Eagle's current difficulties relating to the disposal of large numbers of owned ATR42, ATR72 and Saab 340 aircraft (82 owned and 57 on capital leases) this experience has obviously not led it to increase the proportion of operating leases in its fleet.

Continental Express's entire fleet of Embraer regional jets is sub-leased from Continental. In turn, all are on operating leases with some early deliveries financed through EETC's. Embraer has an agreement with Continental which gives it obligation to take any of its firmly ordered aircraft that are not financed by a third party and leased to Continental.

Delta traditionally owns a high proportion of its fleet. Of the 593 mainline aircraft, 367 are owned, 48 are on capital leases and 178 are on operating leases. This approximate 2:1 ratio in favour of ownership is reversed with its recently acquired partners ASA and Comair. Of the 216 Embraer Brasilia, ATR72 and Canadair RJ aircraft that make up the regional fleet, only 77 are owned and 51 of these are older Brasilias. The Canadair RJs are mainly on operating leases (22 owned versus 110 on operating leases). At the end of 2000 Delta closed its first EETC financing, and also the world's largest, secured against 20 Boeing 737-800s, 18 757-200s and six 767-300ERs. The success of this transaction (it was four times over subscribed) will probably see it increasingly used for Delta's regional aircraft.

Embraer and Canadair 30- to 50-seat regional jets dominate regional aircraft deliveries, and consume about $6.6 billion of the annual financing requirement.

Northwest owns about 75% of its mainline fleet, but there is more of a bias in the regional fleet to operating leases. Northwest is looking to finance its order for 54 CRJ200s through long-term operating leases. Its 36 Avro RJ85s, operated by Mesaba, were financed through operating leases.

Air Wisconsin's existing fleet of nine Canadair RJs has been financed through leveraged leases, but up to 75% of the value of the next 75 deliveries will be supported by low interest loans from the Canadian EDC.

Atlantic Coast Holdings, parent of Atlantic Coast Airlines and ACJet, is one of the largest independently owned operators. It was also one of the first regional operators to use the capital markets when it financed a package of six Canadair RJs and eight Jetstream 41s back in 1997. The group has announced that the aircraft on firm order will be financed through a combination of debt and leveraged leases, with all 2001 deliveries expected to be leased.

Mesa Air Group's fleet of 144 aircraft (as of 31st December 2000) comprised 51 owned Beech 1900Ds and 93 other leased aircraft (CRJs, ERJ-145s, 1900Ds, J32s, Dash 8s and Embraer Brasilias). Mesa Air Group is likely to continue acquiring aircraft through long-term operating leases.

Mesaba, 27.9% of which is owned by Northwest, operates a fleet of 36 Avro RJ85s and 73 Saab 340s. The RJ85s and 49 of its Saab 340s are sub-leased from Northwest, with the remainder leased directly from independent companies.

Midway has used EETCs to finance leveraged lease transactions for some of its Canadair RJs, the first in August 1998 for eight aircraft.

Skywest's fleet consists of 21 owned and 82 leased aircraft. Future CRJ deliveries will be financed through a combination of long-term debt and operating leases through third parties.

Clearly the preference of US operators is to lease rather than purchase. There may, however, be an increasing tendency to purchase as the regional airlines are acquired by their mainline partners.

Conclusion

Based on current and announced production rates for regional aircraft, there is going to be annual demand for some $12 billion of financing. This total is dominated by the 30- to 50-seat jet families of Canadair and Embraer which make up 75% of annual deliveries, with the US alone accounting for 39% of aircraft acquisitions.

The next largest segment is for the new generation of 70- to 110-seat aircraft which accounts for 35% of deliveries. This segment is the most unstable. If the manufacturers cannot place all the aircraft they plan to produce there will be the temptation to offer flexible leases off the production line, just as with BAE and Fokker in the early 1990s. This then has an impact investor confidence and the problem spirals with fewer investors looking to take up whatever financing opportunities there are available.

The US accounts for 75% of annual deliveries, and about 80% of these are financed through leveraged leases and the remaining 20% purchased directly by airlines or through their own resources.

This leaves Europe as the other major market, which account for 20% of deliveries. These airlines use straight bank debt, Japanese Operating Leases (JOLs) and tax leases where applicable. The majority of remaining orders are placed by airlines in the Asia Pacific, and these use JOLs or straight purchases.

The constant introduction of new regional jets on long-term financing is reducing the proportion of aircraft on 'short-term' operating leases. With the exception of GECAS, which has yet to place an aircraft, the regional jet revolution has failed to produce interest from operating lessors, and so availability of aircraft on short-term operating leases will remain limited. GECAS's involvement in the 70- to 110-seat market could actually destabilise it further. Having talked up the market and encouraged manufacturers to build up production rates, GECAS will then compete with them to place aircraft.

With the popularity of regional jet aircraft showing no signs of abating there appears to be no shortage of financial institutions willing to finance them. A large number of outstanding orders and options for the Canadair RJ and Embraer ERJ-145 families are for subsidiaries of large US operators. Financing opportunities therefore exist through the strength of the majors. With this increasing trend towards regional airline ownership by the mainline carriers, the overall creditworthiness of regional jet transactions is going to be increasing. It is likely that the majority of these aircraft, particularly in the US, will be financed through long-term operating leases, with an increasing proportion of the debt provided through the capital markets.

With the long running dispute between Bombardier and Embraer showing no signs of abating, the continued availability of financing support from both the Brazilian and Canadian governments is obviously beneficial to airlines, especially small carriers. These privately held operators would otherwise be subject to higher rates of financing than their mainline owned equivalents.

Turboprops constitutes the remaining 10% of the outstanding financing requirement. This comparatively small proportion highlights that it is an increasingly niche business. With an increasing tendency towards less developed markets, the support of the manufacturers is also essential.