

Most freighters are used aircraft, operated by the last of several users during their lifetime. The inherent residual value risk in freighters means financing techniques have to rely on guarantees and recourse to entities other than the aircraft. Many techniques have been evolved to suit an airline's or lessor's circumstances.

The maze of freight aircraft financing techniques

While the majority of freight aircraft acquired by airlines are used ones, those airlines have a variety of ways in which to acquire and finance them. What methods of financing are available to suit the different circumstances of airlines?

Freight airlines can be broken down broadly into three categories. The first of these is the large airlines that operate mainly small package operations. This includes FedEx, United Parcel Service (UPS) and DHL. These airlines have generally achieved a high level of respect in the aviation finance fraternity, on account of their financial performance.

FedEx, for example, achieved operating profits of \$1,163 million, \$1,010 million and \$507 million, over the past three years and has had an AAA credit rating for most of the time. FedEx not only has few problems getting financing for new and used aircraft by the conventional means that major passenger carriers do, but is also able to finance many aircraft from its own cash reserves.

Other airlines in this category similarly have few problems obtaining finance when acquiring aircraft. Emery, for example, has a BBB credit rating.

The second category of airlines broadly covers established carriers that do not have the same financial success as FedEx or UPS. These airlines tend to have smaller cash reserves and fewer choices of financing techniques. They often acquire aircraft on operating leases. These airlines are mainly north American and European, but also include several

carriers from other parts of the world. Examples are American International Airways, Evergreen, Arrow Air and Channel Express.

The third category of airlines are situated mainly outside north America and Europe and often operate the oldest aircraft, such as 707s and DC-8-50s. Many of these aircraft have been purchased at values as low as \$1 million, or are on operating leases. These airlines often rely on *ad hoc* charters and wet lease operations for revenue and consequently have poor financial status and lack the ability to acquire aircraft by means other than purchase or operating lease. Examples are airlines from South America and Africa.

Besides airlines, lessors and freight conversion facilities also have to consider methods of financing for aircraft, particularly when a type that has never been converted is having its conversion programme launched. Recent examples are the A300B4 and A310.

Financing issues

The biggest difficulty in all categories of acquisition is that the aircraft are used. New aircraft have few problems with financing on account of their ability to be re-marketed and hence attract asset-based financing. Techniques have evolved where aircraft can be repossessed, allowing them to be re-marketed in the event of default by the operator. Young aircraft also have a large market to be re-sold to, which makes asset-based financing possible. This means that aircraft

acquisition is possible for airlines with poor credit ratings, weak finances or an unproven track record.

Freight airlines are the second, third or even fourth operators of an aircraft. The trickle-down character of the aircraft market means freight operators are end-users of aircraft, which diminishes the potential scope for re-sale.

Their vintage also makes them more difficult to re-market. Overall, they have questionable financing qualities. This is not such a problem for types that have become freighters more recently or are more popular in the freight fraternity, such as the DC-10 or 727. It is the case, however, with types such as the 747-100, 707 and older DC-8s.

Aircraft that have not been converted and accepted by the freight airline fraternity, such as the A300-600, have the stigma of being unproven and expensive to introduce to the market for a passenger role. Being new to the market could make them difficult to re-market in the event of the first operators being unsatisfied and returning them to lessors. This will then damage residual value. These problems cause a high level of risk to hang over a new freight aircraft type until it has become established. Until this occurs, financing for acquisition, conversion and service preparation, will be hard or impossible to acquire unless a solid form of guarantee is in place.

Residual value risk for freighters is also enhanced by other factors. Several types have a number of ageing issues and limited market appeal to other freight carriers. There are also younger types



that are attractive alternatives, which can damage the re-marketing of older competitors. All these aspects are negative and influence financing techniques.

Examples of residual risk are 747-100s and older -200s. There are few airlines these could be re-marketed to on account of their size. Other than FedEx, few airlines operate the DC-10 and these have small fleets. Although the DC-10 is young compared to many types, it has limited market penetration, which can make re-marketing difficult. The 727 is now prevented from increasing numbers in Europe, but still has a captive market in the US.

A perceived higher level of residual value risk means asset-based financing will be uncommon. Guarantees or risk average will then have to come from other means. This often results in a high level of equity investment (20–25%) from private investors. Equity investors usually require high rates of return and an interest in the aircraft's residual value.

Alternatively, lessors, manufacturers or conversion facilities may have to provide guarantees and take risk in the aircraft to get a project to fruition.

First tier airlines

Airlines with high credit ratings are in a position to use financing techniques similar to those used by major passenger airlines. These techniques include straight cash purchase, borrowing of debt, sale and leaseback transactions, finance leases, private investment and operating leases.

Cash purchase

Many US freight airlines have financed about 60% of their aircraft through profits and cashflow in the past few years. Most freighter aircraft are small, such as the 727-200 and have a total acquisition cost of \$5–7 million. Many aircraft bought now will already be fitted with Stage 3 hushkits. Airlines just need to buy aircraft and convert them to freighter at a cost of about another \$1 million.

One way these airlines can reduce their net investment is to arrange a sale and leaseback transaction on the engines. Between \$3.5 and \$5.0 million is still required. Airlines can fund some of this from cashflow and obtain regular debt from banks to bridge acquisition and conversion. Many established carriers can do this by their own corporate strength and credit ratings.

Self-financing

Airlines can take self-financed purchases a step further by arranging a sale and leaseback transaction on the whole aircraft once it is ready for operation. This then allows the carrier to realise the value of the asset immediately and regain the invested cash for investment in further aircraft or other projects.

The added benefit is that airlines with solid track records acquiring reputable aircraft can have the aircraft financed at an amount equivalent to or a percentage of the appraised value.

Most established airlines are able to finance cheaper types such as the 727 from their own cash resources and partially from debt borrowed on the strength of their corporate ratings.

A group of aircraft can be financed in one transaction, and so a securitisation is used. The amount securitised is usually a percentage of the appraised value. That is, 80% of an appraised value of \$20 million for a A300B4-200F will require a \$16 million financing.

The bonus is that if aircraft are acquired at bargain rates and can be converted at a favourable discount of standard conversion cost, the actual build cost can be less than the amount of required finance. For example, the build cost may be \$15 million. The airline is therefore able to make an instant \$1 million profit.

This type of transaction may require complicated structuring. The airline lessee needs to have good underlying credit. The operating lease arranged on the sale and leaseback for the airline might have a shorter term than the finance lease. The lessor therefore has to be able to re-market the aircraft when the airline's operating lease finishes.

Private investment

Large freight airlines have also financed aircraft with the aid of private investors. Larger carriers have on several occasions made acquisitions of a large number of passenger aircraft and converted them. This not only requires a large amount of financing, it also necessitates a high level of tax capacity. That is, the owner of the aircraft with the right to claim tax benefits of ownership needs a high level of profitability to make full use of those tax benefits.

While many airlines have both the cash and tax capacity to acquire a few aircraft of low value, such as a few 727s, the situation is different in the case of major small package operators acquiring large numbers of aircraft such as the DC-10, MD-11 or A300 for conversion.

Even a high profit-making airline such as FedEx will not have the tax capacity to own all the aircraft it operates. It will then require an entity with a large tax capacity and the ability to finance a large fleet. In the case of major passenger carriers large fleets are financed with finance leases and aircraft financiers and banks provide the necessary tax capacity.

Freight airlines therefore approach entities with large cash reserves, profits and tax capacity. Entities such as Walt Disney have been known to finance



aircraft for major freight carriers and their tax capacity allows a reduced rate of debt repayment for the airline. The entity benefits from a reduced tax liability; the airline from lower lease rentals.

The financing entity is concerned with the airline's credit rating and may be able to use the aircraft as security. The risk is in the residual value of the aircraft in the event of a default. A freight carrier will often need a long lease term, that is, 15–20 years. Airlines with a high credit rating will then satisfy investors that the debt will be fully paid out. A high level of risk will be with airlines that are perceived more likely to default. Interest and lease rates will be higher. Again, the airline can finance the aircraft for more than the build cost and make an instant cash profit.

Debt and finance leases

Major freight carriers also use their credit ratings to arrange structured debt, in the same way as passenger operators. Common forms are enhanced equipment trust certificates (EETCs) and securitisations. Because the EETC is based on aircraft repossession, it is used as a means of cheap debt by airlines with poorer credit ratings. This still leaves the issue of re-marketing the aircraft. EETCs can also be used in finance leases.

As well as using EETCs, finance lease structures can use export credits to enhance the airline's credit, and so reduce the lease rate.

Finance leases in the US still have access to high tax benefits and so can be a cheap method of financing for higher credit airlines acquiring new aircraft.

Operating leases

If all these possible avenues of financing have been rejected, all that remains is the operating lease.

This is simple for established aircraft types. There will be many available of each type and default will be easily overcome by the fact that there is a large customer base to re-market the aircraft. For example, the large number of 727s and 727 operators means lessors will readily acquire more 727 aircraft and convert them. The market forecasts several hundred 727s will still need to be converted to satisfy demand, minimising the risk with each aircraft. Lessors can then often speculatively acquire popular types and convert them and secure operating leases when the aircraft are ready for service.

Although equity might be required to buy aircraft and make them ready for freighter service, once leases are secured with airlines, debt can be made available. This releases equity, which can be used to fund more aircraft. The ease with which lessors can secure debt depends on their own financial strength, the credit and risk of the lessee and the aircraft type.

Although this has been acceptable for the 727, it has not been as risk-free as originally perceived for other types.

Only a few major airlines, such as FedEx, have the financial and corporate strength to launch new programmes involving, say, the MD-10, or get finance from private entities with excess cash and tax capacity.

One example is the DC-10. Although the maximum zero fuel weight provides the aircraft with a high payload, and it has good range, the DC-10 is still only operated in a limited number of small fleets outside of FedEx. Several DC-10s have been acquired in recent years by a number of lessors, which have acquired the aircraft in the expectancy that there will be demand for them. The DC-10, however, has not been so readily taken up by airlines as was expected.

Basic equity and debt financing only works if the build cost and resulting amortisation payments are low enough in relation to market lease rates for the type. Moreover, equity investors usually want high rates of return on their investment and a portion of the re-sale value. For example, a DC-10-30 may have a market lease rate of \$250,000 for an 'average' airline credit. The aircraft may have a 15-year life remaining. Total build cost could be in the region of \$25 million if acquisition cost is about \$10 million. Straightforward 100% debt amortisation over 15 years at 8% interest rate would require a monthly rental of \$238,000. This would provide some profit, plus the aircraft may have residual value. The structure would not, however, provide a high enough return necessary for any equity. The transaction would therefore be unacceptable.

A bargain acquisition would reduce build cost to \$21 million, for example. This would require a monthly rental of \$200,000 if 100% debt financing were used. A lower rental would satisfy the debt portion if the equity portion was 20% or 25%. The market lease rate would then allow the required return for the equity investor, as well as achieving profits from the aircraft's residual value.

The validity of these transactions therefore depends on aircraft build cost, debt portion and interest rate, required return on equity, market lease rate and residual value performance of the type in question.

A softening in the market of lease rates can temporarily cause losses for the lessor. A long-term view, which is hard to assess, is the residual value performance of aircraft. The results can be both positive and negative for a lessor. DC-8-70s, for example, have had extremely good residual value retention. Aircraft often sell for 80% of their original build

Banks will only finance new programmes or large fleet acquisitions if they have recourse to the lessor or its financier, rather than the aircraft. A lessor therefore has to be worth several hundred \$ million to launch a programme that might involve, say, the A300B4 or A300-600.

cost of 10 years ago. The 747-100 is an example of poor residual value, since this is virtually zero.

DC-10 acquisitions may be financed on the pretext of strong residual value performance, but the younger and more capable MD-11 is attractive and could displace the DC-10, or at least reduce its popularity.

Second tier airlines

Airlines with poorer credit ratings than the major carriers do not have the revenue streams or creditworthiness to justify acquiring new aircraft. Finance leases are unavailable to these airlines and the supply of debt from private investors or high profit entities with surplus cash and tax capacity is also unlikely.

Straightforward cash purchases may be possible, but only usually for types that are individually easy to acquire, such as the 727. These airlines will be able to borrow debt on the strength of their own corporate credit ratings, and may also be able to arrange sale and leaseback transactions.

Operating leases will also be available, but lease rates and terms will be more stringent based on perceived risk and creditworthiness.

Third tier airlines

These airlines have the smallest number of options, which are limited to cash purchases and operating leases. In both cases these will be the oldest aircraft with low values or with little or no outstanding debt to amortise with lease rentals.

New freighter projects

Scenarios often occur whereby airlines that do not have the credit rating of FedEx need to acquire a new fleet. For example, 20 owned DC-8s may have to be replaced with larger types, such as the A300. DHL, for example, acquired a large number of A300s and has also made a commitment to a fleet of ex-BA 757s to replace its 727s.

A few airlines, such as FedEx, have the financial and corporate status to launch a new programme. The best example is the MD-10. Few other carriers



are able to do this, and would rely on support from other entities to launch such a development.

Similarly, lessors and conversion facilities are in the position of having to secure financing to launch a new product. The most recent example is the A300B4, and could soon be followed by the A300-600.

The inherent difficulty in these situations again lies with level of market acceptance and residual value risk. Airlines with reasonable creditworthiness and low tax capacity will just want to have a new fleet on operating leases, for example, by swapping owned DC-8-70s for A300B4s. The difficulty is securing financing for the period of acquisition, conversion and preparation for service. Once aircraft are ready for service and a lease has been put in place then debt can be arranged for an operating lease.

These situations are unique because commercial finance institutions rarely provide debt for the process until aircraft are proven. To establish aircraft in the market several have to be converted and leased to reputable airlines. This will take several years and a large amount of financing.

The interested parties are the conversion facilities, lessors and possibly private investors. When Dasa launched its A300B2/4 conversion programme, for example, operators were interested in the aircraft. Many had bought their own, and lessors had financing available, but Dasa helped in the financing for the conversion. Dasa provided debt for a seven- or eight-year term and back-stop financing until

leases were signed. Back-stop financing covers cost of conversion until the aircraft is leased, when debt can be used. Dasa then effectively acted as a bank for the lessor.

Banks can provide financing for airlines that have aircraft which are to be converted if a programme has been launched and the airline is reputable. Once the aircraft are ready for operation a synthetic lease can be arranged. This is a financing structure that relies on the rules of off-balance sheet and tax accounting. That is, the aircraft is not shown on the airline's balance sheet, however, tax benefits are still allowed. This is only beneficial if the airline has the tax capacity for the aircraft. Otherwise a normal tax lease can be arranged for a reputable US airline with good credit.

Lessors launching new conversion projects can also use private financing, but a high return on equity investment will be required. Banks will only finance lessors starting a new conversion venture if there is recourse to the lessor or its financier, since their future lessees are unknown. The lessor's own credit therefore has to be strong enough for the bank to finance during this delicate period. Lessors starting a new project have to be established, have strong credit or have the strength of their owners or financial backers.

Launch of an A300-600 programme, with, say, 10 aircraft, would require \$200-250 million and financing could not be found by relying on their asset value. Banks will not take programme risk, only risk on the lessor or conversion facility. Generally this would only be for lessors worth more than \$200 million. **AC**