



B747-400F/SF



B767-200/300 SF

'How to Finance a New Cargo Startup Airline' by D.J. Ghosh Freighters World Conference November 2004, Dubai UAE



A300-600RF



A310-300F



How to Finance a Startup

There are typically two types of financing required for financing any airline:

- **Aircraft Financing**
- **Financing Working Capital**



Aircraft Financing

WHY IS INVESTING IN AIRCRAFT DIFFERENT FROM INVESTING IN OTHER ASSETS

- Airlines have very special requirements for capital because you are combining the following special characteristics of the airline business when you create a financing structure:
 - Large appetite for capital (Airlines are a very capital intensive business)
 - Industry cyclical and lower profit margins
 - Cash flow volatility
 - Low return on assets and equity
 - Security Value (residual value) of modern aircraft as perceived by the financial markets can vary significantly between different organizations.
 - Airlines can be a risky business



Aircraft Financing

CYCLICALITY

Cyclicality has had a far greater impact on aircraft demand and aircraft values than long range forecasts of supply and demand:

Aircraft Industry Cycles

	1st	2nd	3rd	4th	5th
Up cycle starts (Orders>deliveries)	1958	1972	1985	1995	2002?
Boom Years	7	6	4	2?	?
Up cycle ends (Orders peak)	1965	1978	1989	1997?	
Orders/Deliveries	2.7	2.4	2.4		
Deliveries>Orders	1967	1980	1991		
Deliveries Peak	1968	1980	1991		
Orders Trough	1971	1982	1994		
% of peak orders	24%	28%	27%		
Deliveries Trough	1972	1984	1995		
% of peak deliveries	32%	60%	59%		
Down Cycle ends	1972	1985	1995	2002	

Observe the three cycles in the jet era beginning in 1958; the similarity between cycles and the shortening of the cycle time. For financiers, such vigorous yet seemingly cyclical behavior presents both challenges and opportunities.

CHALLENGES: They need to finance aircraft on a sufficiently conservative basis to be able to survive the ups and downs in an industry where asset values fluctuate widely through the cycle and where there is significant risk of credit failure/lease or debt re-scheduling in the down cycle

OPPORTUNITIES: They can significantly enhance profitability by correctly timing purchases and sales in relation to the cycle.



Aircraft Financing

AIRLINE FINANCES

Airline revenues have grown rapidly. They quadrupled between the 1960's and the 1970's. They tripled again in the 1980's and rose again in the 1990's.

WORLDWIDE REVENUE AND EXPENDITURE 1960-1999 (US\$ billions)

	1960's	1970's	1980's	1990-94	1995-99	1990-99
Revenues	96	383	1204	1093	1544	2637
New Income	3.2	6.2	12.5	(21)	(33)	12
Net Margin	3.3%	1.6%	1.0%	(1.9%)	2.1%	0.5%
Depreciation	5	19	60	55	77	132
Re-building						
Balance sheets					25	25
New cash flow	8	25	73	34	85	119
Capital expend.	20	48	143	186	233	419
As % of revenues	21%	12.5%	12%	17%	15%	16%
% financed by						
Cash flow	40%	53%	51%	18%	36%	28%

DECLINING PROFIT MARGINS: However, rapid revenue growth was accompanied by high capital expenditures and rapidly declining profit margins.

USE OF DEPRECIATION: Airlines have been funding most of their capital expenditures from depreciation making them less dependent on sustained high profits.

NEED FOR EXTERNAL FINANCING: Since internal cash flows have been contributing less and less to total capital expenditures, there is a strong need for off balance sheet financing.



Aircraft Financing

RESIDUAL VALUE RISK

- No single factor is as important in determining the pricing of (and value in) an operating lease than the actual or expected residual value of the aircraft at the end of the lease.
- In the past when inflation was high aircraft prices typically ran ahead of inflation by 1%.
- Today with new aircraft prices rising very slowly, residual value prediction has become a crucial part of deal evaluation.
- Each new aircraft development can permanently diminish the values of the preceding variants by up to 15%



Aircraft Financing

AIRCRAFT FINANCING OBJECTIVES

- *“The objective of every airline should be designed to maximize the value of the business by minimizing the long term cost of capital, while keeping financial risk at tolerable levels”*

MINIMISING THE COST OF CAPITAL

- By definition, the optimal blend of debt and equity will serve to minimize the airline’s cost of capital;
- DEBT is effectively lower cost than equity because it enables the airline’s owners to expand the business at a fixed cost without ceding control to the capital providers. However, it is inherently riskier because it imposes upon the borrower an obligation to pay interest costs and to repay principal. Thus it creates a higher bankruptcy risk.
- EQUITY on the other hand, dilutes existing shareholders, resulting in a high cost to the extent that new shareholders receive a rate of return above the cost of debt. However, it allows the airline the option to pay or not to pay dividends.

MINIMISING THE FINANCIAL RISK created by debt generally involves managing the following risks:

- Access to financial markets: Airlines need to insure that they have access to funds when they need to borrow funds.. They need to plan ahead for this.
- Interest rate risk: They need to plan on managing interest rate fluctuations on their debt.
- Currency Risk: Since cash flows may be generated in several different currencies, airlines need to plan for this currency exposure.
- Aircraft Values: Since aircraft values fluctuate widely, a prudent asset management policy that includes asset value guarantees and operating leases must be introduced.

CONCLUSION

- There is no “right mix” of debt and equity. Each airline tends to establish its own “comfort zone” of financial gearing, using credit ratings as a benchmark, but more often looking at competitor’s balance sheets for guidance.



Aircraft Financing

SOURCES OF AIRCRAFT FINANCING

There are seven major sources of export financing. One is internal and the remaining six are external:

INTERNAL

- Internally generated cash: As discussed earlier, with the razor thin margins of airlines today, the role of international cash generation has been severely reduced.

EXTERNAL

- Export Credit:: These are provided by government agencies established to provide support for their country's exports. They usually guarantee a loan for a maximum of 12 years, on a fixed or floating rate, and are usually structured as a full payout finance lease.
- COMMERCIAL BANK DEBT: This is widely available, more flexible than export credit, is well priced and offers ownership benefits. However, banks may not want to lend for more than 10-12 years and may not be able to finance the aircraft by themselves.
- TAX LEASES: In this case the airline gets a lower cost of financing by transferring the tax benefit to another taxpayer who values them more highly than the airline. Several type of tax leases were developed in the past, some of them quite complicated, but restrictions by tax authorities are reducing the attractiveness of this type of financing.
- DEBT CAPITAL MARKETS: The well organized US domestic bond market has been tapped because of its capacity to absorb large issues, offer attractive rates and long maturities, a diversified investor base and greatest liquidity. The credit quality of these securities can be upgraded by overcollateralisation, creating Enhanced Equipment Trust Certificates (EETC'S), permitting non-investment grade carriers to borrow at investment grades of interest. However, credit spreads are volatile compared to commercial debt, and usually only well known airlines qualify for this type of financing.
- MANUFACTURER'S FINANCE: With competition heating up between the major airframe manufacturers, financing has become an important tool to securing new orders.
- OPERATING LEASES: Operating leases are becoming increasingly popular as a form of off balance sheet financing with no residual value risk for the airline, lower up front costs and fleet planning flexibility. It offers airlines operating privileges without ownership risks.



Aircraft Financing

WORLDWIDE SHARE OF DIFFERENT TYPES OF AIRCRAFT FINANCING

According to a poll conducted in April 2004 at the New York Air Finance Conference, the shares for the six most popular sources of aircraft finance were as follows:

SOURCE	% of
TOTAL	
a) Export Credit	31%
b) Operating Leases	31%
c) Loans	13%
d) Manufacturer's finance	12%
e) EETC's/Debt Capital Markets	9%
f) Tax Leasing	4%
GRAND TOTAL	100%



Aircraft Financing

WHY OPERATING LESSORS ARE THE BEST SOURCE OF AIRCRAFT FINANCING FOR STARTUP CARGO AIRLINES USING SECOND HAND FREIGHTERS

THE OPERATING LESSORS PERSPECTIVE:

LIFE EXTENSION: Financing freighters drives life extension and allows for continued deployment of existing assets.

- **BORROWING ABILITY:** Their ability to borrow on a non-recourse basis if they wish is a perfect way to finance a conversion program for freighters.

THE STARTUP CARGO AIRLINE PERSPECTIVE

- **CREDIT HISTORY:** Most startup airlines with little or no credit history will not have access to other types of financing. This type of “off balance sheet financing” is ideal for startups
- **FINANCING OLDER FREIGHTERS:** Operating lessors are virtually the only financiers who have financed older freighter aircraft.
- **LOW STARTUP COSTS:** Most operating lessors will require security deposits/maintenance reserves equivalent to 3-6 months rental. Thus the lessee’s upfront contribution to the transaction (including the first month’s rent) will normally be limited to between 4-5 % of the asset value. There are not many industries where a poor or unknown credit can acquire the use of a high value capital equipment for an up-front investment of 4-5%.
- **LEASE DURATION:** The shorter duration of operating leases (3-7 years) gives the startup the necessary flexibility to adjust its fleet plans to suit the business environment.



AIRCRAFT FINANCING

A New Generation of attractively priced Passenger Aircraft will require creative financing for conversion to Freighters

Aircraft Type	Current Value	Conversion Cost	Total Cost	Lease Rate	Lease Rate Factor
	US\$ Millions	US\$ Millions	US\$ Millions	US\$,000 pm	%
B747-400	40-50	28	68-78	550-650	0.82
MD-11	25-40	15	40-55	450-500	0.91-1.12
A300-600R	13-17	8.5+2	23.5-27.5	250-330	0.83-0.93
A310-300	9.5-13	8.5+2	19.5-23.5	220	0.89-1.04
B767-300	16-30	12	28-42	250-300	0.71-0.88
B767-200	5-10	12	17-22	220-250	1.12-1.27
B757-200	12.5-20	6.5	19-26	220-230	0.87-1.05
B737-400	9	5.4	14.4	125-150	1.18
B737-300	6	5.4	11.4	150-170	1.32

- Note: The listed values of aircraft are on the higher side.
- The conversion costs appear higher since heavy maintenance checks have been included
- EFW Catalogue Price for an A300-600R or A310-300 is USD8.5 million



Financing Working Capital

WORKING CAPITAL

- Every airline or business requires working capital for the operation of its day to day business. Startup airlines have significant other costs associated with launching their business. These include, but are not limited to:

EXPENSE HEAD

Costs associated with obtaining government certification from DOT/FAA

- 3 -6 months worth of lease/rental payments
- Cost of spares inventory/maintenance reserves
- Fuel contract deposits
- Cost of all letter checks for three months
- Cost of establishing a maintenance program
- Route proving analyses
- Aircraft parking and storage costs
- Management/Sales/Marketing Expenses
- Office costs
- Crew costs, including training
- Maintenance costs above amounts reserved
- Reserves to cover lessee defaults

In the case of a startup airline these costs could add up to a significant sum and may require a more organized structure to raise the seed capital for the startup



Financing Working Capital

SOURCES OF SEED CAPITAL FOR A STARTUP CARGO AIRLINE

- **PURE EQUITY PLAYERS** will include individuals or organizations who invest in airlines with an expectation of a high returns on their investment and a well defined exit strategy either through a public offering or through a merger or acquisition with another similar company.
- **INVESTORS SEEKING ASSET DIVERSIFICATION:** These include institutional investors such as pension funds, life insurance companies and hedge funds who are seeking to diversify their asset base to mitigate risk.
- **STATE PENSION FUNDS** seeking to invest in businesses which bring jobs and income to the airports and communities which surround these airports. Examples of these “longer term investors” include the Alabama Pension Fund and CALPERS of California.
- **STRATEGIC INVESTORS:** These could include domestic or foreign airlines, integrators, forwarders, logistic providers or large shippers, who have a vested interest in your business for reasons of competitiveness, market access or aircraft availability.
- **ADVANCE LEASE PAYMENTS:** If an airline customer truly wanted to help launch your business, he could “up front” some of the lease payments to help cover some of your startup expenses.



Financing Working Capital

STRUCTURING THE INITIAL SHARE OFFERING FOR SEED CAPITAL INVESTORS

There are four main considerations in structuring your initial share offering for the seed investors:

- **DOMESTIC vs. FOREIGN OWNERSHIP:** Does the equity structure meet the guidelines of the US Department of Transportation (DOT) regarding foreign ownership share of a U.S. flag carrier.
- **SMALL BUSINESS CONSIDERATIONS:** Is it possible for the startup cargo airline to benefit from the small business benefits afforded by U.S. government and large private sector organizations.
- **MINORITY BUSINESS CONSIDERATIONS:** Similarly, can the startup cargo airline maintain its “minority business” status to qualify for special contract treatment by the government and private sector in the U.S. by not over diluting its “minority business” structure.
- **TIME PERSPECTIVE OF INVESTORS:** What will be the expectations of your investors. Do they expect a “quick buck” or will they provide the “patient capital” that startup cargo airlines desperately need to grow their business.



Financing Working Capital

FINANCING A STARTUP CARGO AIRLINE

REVENUE STREAMS AND LOAD FACTOR RISK

- **A.C.M.I. OPERATOR:** In this case the load factor is transferred from the wet lessor to the lessee. The lessor agrees to provide the lessee with an aircraft/s, crew maintenance and insurance in return for a pre-negotiated “block hour rental” over a few months or years. The lessee pays for the fuel. In the case of a startup cargo airline providing aircraft under A.C.M.I. contracts, the revenue streams are guaranteed under a long term contract from a lessee with top credit ratings. This could then easily help the startup secure financing and launch the operation and develop a credit profile, based on this secure stream of rental payments.

The challenge then for the A.C.M.I. operator is to provide schedule reliability to the lessee and minimize lease disruption to help honor its obligations to the operating lessor.

- **SCHEDULED CARRIERS:** Scheduled carriers carry with them all the risks associated with providing a schedule and filling up a plane with revenue cargo. These include marketing the space to their customers, be they individual shippers or freight forwarders. Due to the cyclical nature of their revenue streams, schedule carriers will have a greater need for working capital compared to A.C.M.I. operators.



Financing Working Capital

FINANCING A STARTUP CARGO AIRLINE

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How to Finance a Startup

The “American Friendship” Market Entry Strategy

- ACMI: Launch your operations as a provider of dedicated freighter aircraft on an ACMI (Aircraft, Crew, Maintenance, and Insurance) basis.
- IDENTIFY YOUR CUSTOMER BASE:
- Very large shippers or freight forwarders with the volumes and financial clout to be able to *sign longer term contracts*.
- International airlines, integrators and US government agencies.
- OPERATE ON CUSTOMER’S OWN SCHEDULES: Operate your aircraft according to the customer’s schedule with a commitment for a fixed number of block hours per month with the customer taking responsibility for filling the aircraft.
- OFFER CUSTOMERS A CHOICE OF LARGE WIDEBODY AND MEDIUM WIDEBODY AIRCRAFT: This is based on the following premises:
 - a) *Not all customers can support a large wide body operation.* You must therefore be able to offer them medium sized aircraft as well.
 - b) *Fleet diversification reduces dependence on one aircraft* type and helps create a balanced portfolio.
 - c) *Most aircraft financiers, including operating lessors, have a diversified* fleet with a pre-dominance of small to medium sized aircraft, and a fewer number of large aircraft. Thus fleet diversification will increase the appeal of your business plan among the financial community.
 - d) Medium-wide body aircraft, such as B767s, A300-600s and A310-300s are easier to re-market because they have applications in both the express and the general cargo markets.



How to Finance a Startup

Fleet Plans For A New Airline: *Our four freighter choices*

- There are several aircraft which qualify in the large and medium wide body segments. *Our four freighter choices* for the fleet of our new airline are as follows:
- **LARGE WIDEBODY (100+ tons)**
 1. The B747-400SF, soon to come on the market is the ideal successor to the B747-200 for the long haul markets.
- **MEDIUM WIDE BODY: (40-60 tons)** The three aircraft that we like in this category which is forecast to grow by the largest rate over the next 20 years are:
 2. B767-200SF/300SF
 3. A300-600RF and
 4. A310-300F
- We continue to believe that the MD-11 is a great freighter, but its limited numbers and the strong demand from integrators make it a challenge to source airframes for conversions.



How to Finance a Startup

Proposed Fleet Mix For A New Cargo Airline



A Pyramidal Structure Offers

- Diversity
- Liquidity
- Financial Appeal

The B747-400 Freighters





How to Finance a Startup

Fleet Plans For A New Airline:

1. **THE 747-400SF: The long haul freighter**
 - **Great track record:** The B747-400SF is the ideal successor to the B747-200F/SF, a proven workhorse of the air cargo industry.
 - **Production period:** 1989 to present. 614 built, including 91 production freighters.
 - **Good Economics:** Operated by a crew of two, it is equipped with fuel efficient engines and is Stage III compliant.
 - **Right age-Right price** The B747-400SF is approaching the “right age” and the “right price” for conversion.
 - **Conversion candidates:** Over 500 B747-400 passenger aircraft, up to 14 years of age are operated worldwide and can be future candidates for conversion.
 - **Launch Customer** The B747-400SF is slated to enter the market in the last quarter of 2005. Cathay Pacific is to be the launch customer for this aircraft.
 - **Lower Build Cost:** It's total build cost (\$55-65 million), including the cost of conversion is estimated to be about 1/3 to 1/4 of the cost of a factory built B747-400F (\$200 million), making the economics just right for the general cargo market.

The B767-300 Freighter





How to Finance a Startup

Fleet plans for a new airline:

2. THE B767-200SF/300SF-The freighter for more than one market segment

- **Ideal Replacement Aircraft:** The B767-200SF is the ideal replacement for the aging DC-8's and the higher cost A300B4's
- **Small package and general freight :** It is an ideal aircraft for both small package freight as well as for general cargo operations. (At the present time the B767F –“production freighters” are currently in use by UPS for small package freight, and by Asiana, ANA Cargo and Lan Chile for general cargo.)
- **Good Economics** : The B767-200SF has two fuel efficient engines and a two man crew to reduce trip costs.
- **Interlining capability:** This wide-body aircraft has excellent interlining capability with other wide-body aircraft carrying 8 feet containers or pallets.
- **Conversion candidates:** The B767 family consists of over 800 aircraft which translates into a well established infrastructure and high availability of economic spare parts,
- **Launch customer:** IAI will deliver four B767-200SF's to TAMPA Cargo, starting this year, which are to be financed by GE Capital.
- **The B767-300SF is still on the drawing board** and may become a reality in the very near future. When ready, the more capable 767-300ERs will easily become the most popular medium-wide body available on the conversion market, based on the over 500 passenger aircraft built.

The A300-600RF





How to Finance a Startup

Fleet Plans For A New Airline:

- 3. THE A-300-600 RF:** The 48-51 ton freighter for the general cargo market
 - **Established freighter** in the markets served by the large integrators like FedEx.
 - **Production period:** 1984 to present (275 produced including 81 production freighters)
 - **New built freighters are already operating** successfully for DHL Express at night and for Cathay Pacific Cargo in the day. In Europe, IslandsFlug is flying one A300-600RP2F on behalf of Air France to and from West Africa with general cargo.
 - **Conversion candidates:** Falling prices and increasing availability of older aircraft are making this aircraft more attractive to convert.
 - **Most Popular Aircraft:** Along with the A300B4, the A300-600 is the most popular medium-wide body freighter today.
 - **Shorter range** than the A310-300 but with a higher payload.
 - **Current Market Value:** US\$13-17 million plus another US\$8.5 million for the cost of conversion by EADS/EFW and US\$2 million for optional 4 year check.

The A310-300F





How to Finance a Startup

Fleet Plans For A New Airline:

4. **THE A-310-300F**: The 40 ton freighter for the general cargo market.
 - **Production Period**: 1985-1998.
 - Total Production**: 169 Aircraft, including 48 Production Freighters
 - Longer Range Capability**: The longer range capability of 3350 NM for the A-310-300F vs. 2650 NM for the A300-600F gives this aircraft a distinct advantage in serving more long-range destinations requiring smaller payloads.
 - Conversions** for both the A-300-600RF and the A-310-300F are available exclusively through EADS/EFW in Dresden, Germany.
 - Credibility**: This niche freighter has already been given credibility by FedEx (which has cornered the A310-200F market).
 - Current Market Value**: US\$9.5-13 million plus another US\$8.5 million for the cost of conversion by EADS/EFW and US\$2 million for optional 4 year check.



How to Finance a Startup

Q. Why Should You Invest in and finance a new Startup?

A. Air Cargo is a \$40Billion industry, and during the next 20 years cargo traffic is expected to more than triple, outpacing passenger growth and offering airlines even more opportunities to generate revenue.

Before investing in a startup the following should be noted:

- Airlines are a capital intensive business with significant residual value risks
- The industry continues to be extremely cyclical
- Recent history has shown that profit margins are paper-thin and yields are declining

However, with a carefully planned sound financial and business strategy, most of these risk factors can be managed, and investors can be assured of reasonable returns on their investments.



How to Finance a Startup

We believe in the concept of 'The Winning Edge'

- Small differences in our ability can lead to major differences in our income and achievements
- We constantly endeavor to acquire and develop the 'winning edges' in every aspect of the air cargo field, through constant research and study. This will eventually mean all the difference between success and mediocrity

2005 is a great year to start an airline!



A310-300F



B767-200/300 SF



A300-600RF



B747-400F/SF