

Freighter Conversions

Are they good investments?

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Questions for Discussion

- Why consider a conversion investment?
- What ingredients are necessary for a successful investment?
- When should a lessor consider a freighter conversion?
- Is now a good time to invest?

Why would a lessor spend \$ millions to do this to their aircraft?



Air Cargo Economics Favor Converted Aircraft

- Freighter fleet is predominantly used aircraft
 - Three of every four future freighters will be a conversion
 - Air freight economics often drive operators to lowest capex options (747-400F vs 747-400P2F)
 - New freighters prevail only when technology yields tangible economic benefit (fuel burn, payload, reliability) (747-8F)
- Freight demand more stable & faster growing than pax
 - 1,400+ freighters need replacement over the next 20 years
 - 2,000 additional units needed to meet growth (+1% per annum than pax growth)

Boeing forecasts 2,600+ conversions over next 20 years

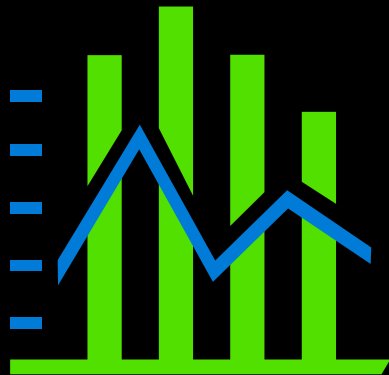
Conversions can be good investments

- ✈ Pax residuals approach scrap at 20-30 years
- ✈ Freighter residuals reach scrap in 30-40 years
- ✈ Good freighter types become candidates at 12-18 years at about the time their appeal in the pax market is declining

Extends Useful Life



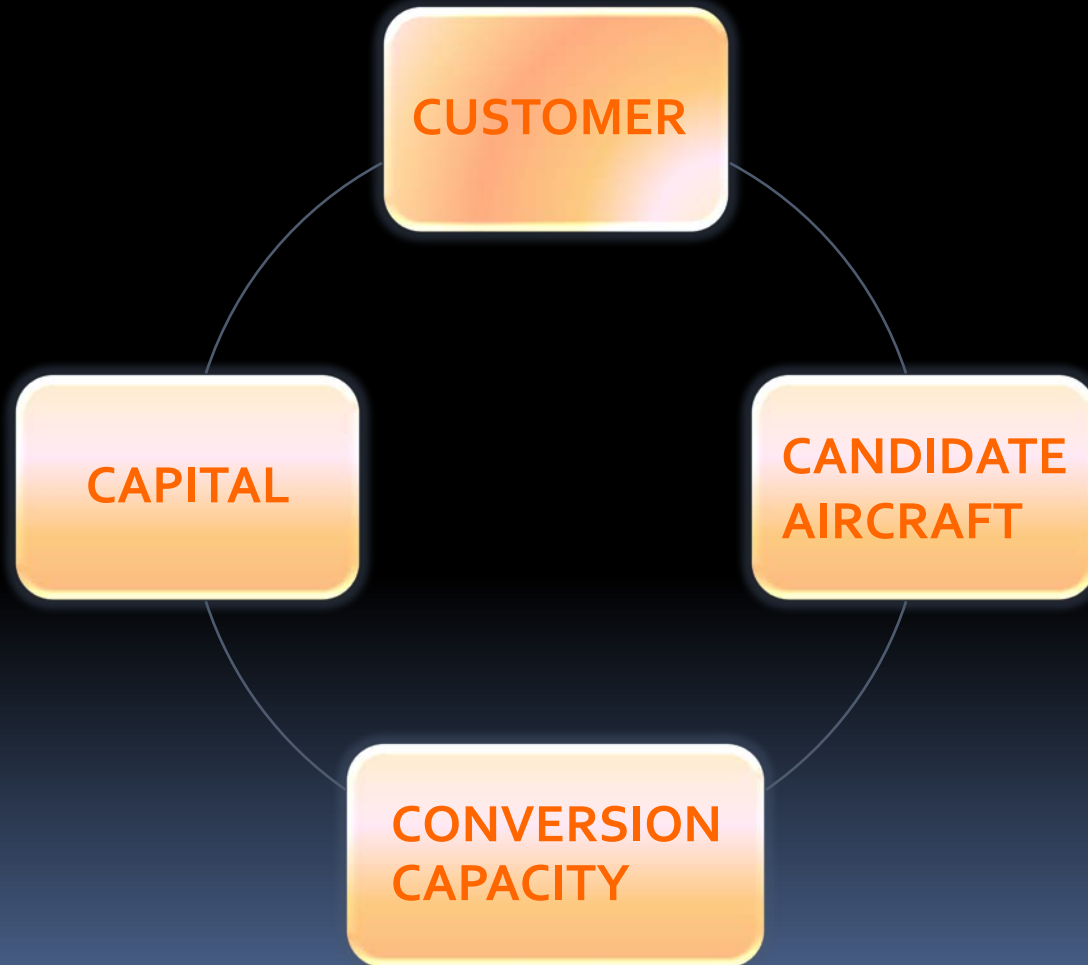
Conversions can be good investments



Freighter values are more stable than pax

- Cargo demand correlates with economic growth
- Freight operators typically last in and first out of downturn
- Operator-to-operator bridging costs are minimal

Ingredients for a Successful Conversion Investment



Ingredients for Success

CUSTOMER

- 200+ Cargo Operators Worldwide
- Highly bifurcated market
 - 40% of aircraft operated by just three express operators
FedEx **UPS** **DHL**
 - 70% of operators have fleets of five or less
 - Remainder are flag carriers (Korean/JAL/Lufthansa etc) or cargo only airlines (Cargolux/Atlas/Heavylift etc)
- Global economic downturn has virtually eliminated demand
 - Market recovery expected in 2010
 - Limited market to replace economically obsolescent aircraft

Ingredients for Success

CONVERSION
CAPACITY

- Most popular types have two or more competitors
- Highly competitive boom to bust business
- Non-OEM conversions no longer a stigma
- Additional cost factors must be considered
 - Cargo loading system
 - Weight upgrades
 - Courier seats/galley

No surprise - an over abundance of capacity exists for all types

Ingredients for Success



- Freighter conversions are non-conventional investments
- Raising debt is difficult and expensive
 - ➔ Sufficient debt needed to meet investment hurdle rate
 - ➔ Conversion process temporarily renders asset un-airworthy – alternative collateral may be required
 - ➔ Conversion requires 2-4 months downtime with no lease income available to service debt
- Equity investors also seek higher returns due to risk
 - ➔ Typical investor requires 15-20% IRR unleveraged
 - ➔ Strength of post-conversion lessee is critical
 - ➔ Exit strategies and contingencies more complex than in conventional lease deal

Equity is available for the right investments, but debt is very challenging

Ingredients for Success

CANDIDATE AIRCRAFT

Popularity in a pax role may not translate to cargo

- Technical requirements differ

Cross section	Operating weights	Lower door size
Payload	Range	Volume/weight ratio

- Fleet Characteristics are also important

Fleet Size	Number of operators	Number of Engine variants
Ownership/financing		

Examples of unsuccessful or marginal freighter candidates

L1011 MD80 A340

Ingredients for Success

CANDIDATE
AIRCRAFT

Aircraft must be bought or written down to viable price point

- Air cargo operators need the right aircraft at the lowest possible cost per available tonne mile
- Age, market conditions, competition & availability of replacement aircraft all impact market pricing
- Overpaying for the right aircraft type may yield the same bad result as buying the wrong type at a bargain price

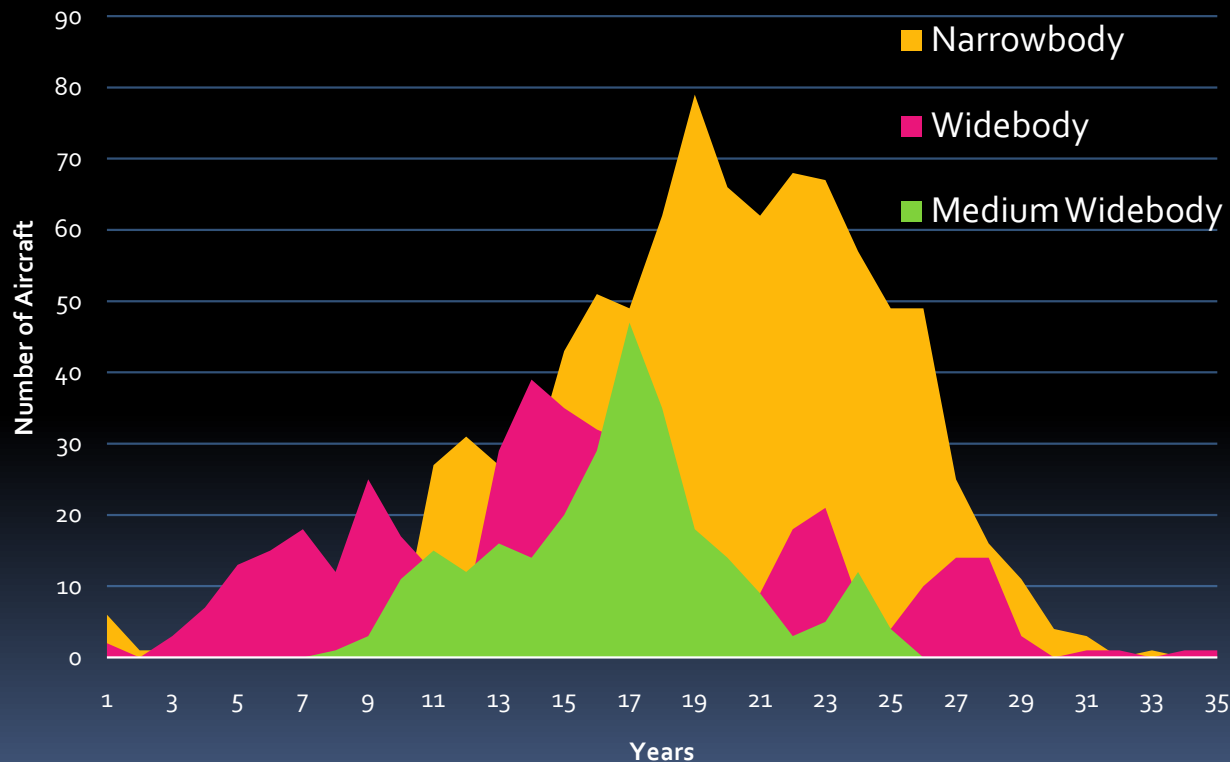
In 2009, the used aircraft market cycle is approaching a point where pricing should support a profitable investment

Ingredients for Success

CANDIDATE AIRCRAFT

Sufficient availability in the “zone of conversion” is needed

Aircraft Age at Conversion (1971-2008)



Candidate Aircraft Types

Narrowbodies

- Large replacement market
 - ➔ 250+ operating 727Fs & ~100 DC-8Fs
- No competition from production aircraft
 - ➔ Utilization cannot support high capital cost
- Lower capital & conversion costs
 - ➔ Smaller investment
 - ➔ High lease rate factor
- Evolving customer base
 - ➔ Traditional US centric general freight operators disappearing
 - ➔ Integrators now dominate US general freight market
 - ➔ Modality shift for lanes of 1,000 NM or less

Candidate Aircraft Types

Narrowbody Types

757

- Operated by three largest integrators (FDX, UPS & DHL)
- Availability improving, but still limited
 - Pax market popularity subsiding in soft market
 - Large, initial FDX acquisition almost complete
- Feedstock prices remain firm
- Good DC-8F replacement & growth option for 727F
- Multiple conversion providers with sufficient capacity

Difficult as a speculative investment, but conversion is an option for existing lessors when pax market is exhausted

Candidate Aircraft Types

Narrowbody Types

737-300 & 400

- Developing markets in China and elsewhere – 73 in service
- Limited US market due to modal shift to road and rail
- Pax values falling rapidly with an abundance of feedstock
- Multiple conversion providers = competitive pricing

A320

- OEM conversion program under development
- AerCap is launch customer with an order for thirty conversions
- Good 727 replacement once A320 values reach the right price point

Smaller narrowbodies can be a good speculative conversion investment provided sufficient quantities are considered

Candidate Aircraft Types

Regional Widebodies

- Fastest growing market segment with 750+ conversions predicted in the next 20 years
- Market has been predominately integrators, but is changing to include general freight carriers such as Lan Chile, Asiana, ANA, JAL
- Additional demand arising from multiple markets:
 - ➔ Intra-Asia Domestic China
 - ➔ Europe – Africa/Middle East
 - ➔ Middle East – Indian Subcontinent
- A300B4F fleet approaching retirement and needs replacing

Candidate Aircraft Types

Regional Widebody Types

A300-600

- Current freighter fleet – 149 including 43 conversions
- Feedstock surplus with 60+ units entering market
 - ✈ American Air – 34 China Eastern - 7
 - ✈ Thai – 17 China Southern – 5
- Open conversion capacity with EFW and FSI
- Large operators (FDX & UPS) not adding to their fleets
- Lower capital cost replacement for A300B4F

Lowest cost per tonne mile among regional widebody freighters

Candidate Aircraft Types

Regional Widebody Types

A330

- Airbus has launched the -200 production freighter
 - ➔ 65 orders booked with 1st delivery in late '09 and 31 by Dec 10
 - ➔ Early speculative orders likely to precede market recovery
 - ➔ Speculative buyers account for 75% of backlog
- A330-300P2F provides excellent direct operating economics
 - ➔ Pre-1998 aircraft face some weight limitations (~75 aircraft)
 - ➔ OEM support necessary for conversion, but not likely during early production of production freighter (2009-12)

By 2013, A330-300 feedstock fleet will be reaching conversion age/price and represent a strong investment opportunity

Candidate Aircraft Types

Regional Widebody Types

767-300ER

- 82 production freighters in service; 33 on order
 - ➔ Strong customer base (ANA, DHL, JAL, Lan Chile, UPS)
 - ➔ Additional orders constrained by market conditions & conversion option
- Pax feedstock stands at 500+ aircraft
 - ➔ Average fleet age -13 years
 - ➔ 244 units in conversion zone (11-18 years)
 - ➔ Prices have not yet fallen to a level to justify conversion
- Boeing conversion line active with two deliveries to ANA
- IAI certification by end of 2009

Candidate Aircraft Types

Widebodies

747-400

- 54 conversions completed by IAI and Boeing
 - ➔ Dwindling backlog with capacity exceeding demand
 - ➔ 14+ units (new build & P2F) in storage due to market conditions
- Feedstock increasing dramatically
 - ➔ 390 potential units with an average age of 14 years
 - ➔ Several Asian carriers retiring aircraft
 - ➔ 25-40 additional units available 2009-11
 - ➔ Values declining
- Near term demand for converted aircraft is soft
 - ➔ Long haul air freight hit hard by global economic recession
 - ➔ Stored units must return to service first
 - ➔ Longer term – competition from 747-8F and 777F

Despite strong operating economics, the small pool of customers & high capital cost make 747-400 conversions a high risk investment

Candidate Aircraft Types

Long Range Widebodies

777

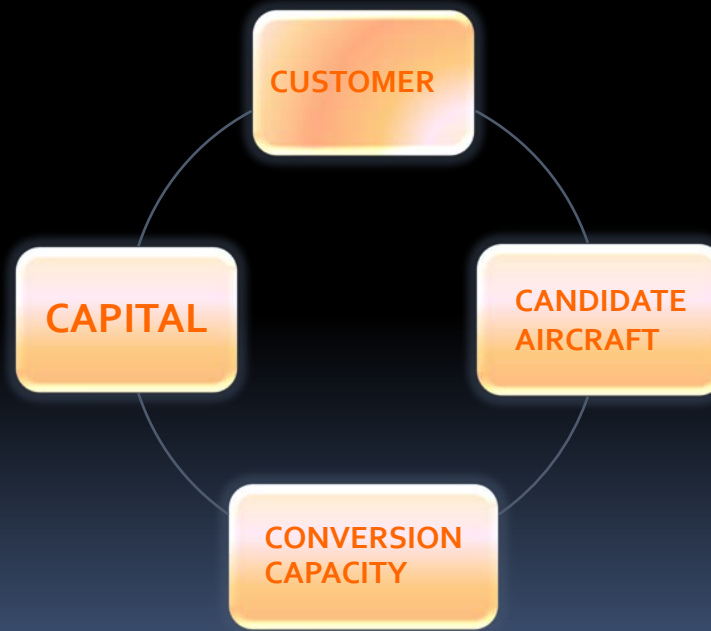
- Excellent operating economics for the -200ER variant
- 68 production units on order with 3 aircraft recently delivered
- Early “A” model aircraft (~86 units) unlikely to achieve acceptable weights
- Feedstock hampered by pax market popularity
 - ➔ Oldest -200ERs are currently 12 years
 - ➔ Conversion activity not likely prior to 2012
- Conversion engineering likely to be more difficult for non-OEM
 - ➔ CATIA design and use of composites reduce design tolerances

Although not a near term investment opportunity, 777 likely to overtake 747-400 conversions within five years

Ingredients for Success

All ingredients are required to succeed

Timing & proportionality are key



When Should a Lessor Consider a Conversion Investment

An Aircraft Mid-life Crisis

- Acme Leasing owns a 18 year old regional widebody
- Aircraft leased to pax carrier until mid-2010
- Re-lease possibly, but at 30-40% below current levels
- Engines are half-life, but airframe needs a heavy check
- Acme is financially stable & a long term player

What are the options?

An Aircraft Mid-life Crisis

The Options

1. Re-lease the aircraft
2. Sell the aircraft to a third party
3. Part-out
4. Freighter convert and then lease or sell

An Aircraft Mid-life Crisis

Option 1 Re-Lease aircraft

Best option if these conditions are present:

- Strong pax market for the type exists and/or
- Unproven or unpopular freighter type
- Market recovery underway & continuing for 5+ years
- Lease rentals sufficient to provide economic return using a realistic residual value assumption

Path of least resistance and always the best course provided conditions are met

An Aircraft Mid-life Crisis

Options 2/3 Sell or Part-out

Best options if these conditions are present:

- Pax market weak and unlikely to recover and/or
- Strong demand & pricing for engine type
- Unproven or unpopular freighter type
- Part-out yields higher return, but takes longer
- Sale quicker, but likely less profitable (or bigger loss)

If these conditions are present but the aircraft is or will be an attractive freighter, further analysis is required

An Aircraft Mid-life Crisis

Option 4 Freighter Conversion

Conversion usually viable only if first 3 options are not and:

- ➔ Aircraft type in freighter role is established
- ➔ Sufficient and sustained freighter demand
- ➔ At least one FAA/EASA certified conversion exists
- ➔ Costs and pricing support a profitable investment

If Acme Leasing deems that freighter conversion is the best option, a deeper dive into the air cargo market and conversion economics is warranted

Is Now a Good Time to Invest?

Maybe . . .



- Feedstock availability improving
- Feedstock prices declining to a level that supports conversion
- Conversion capacity readily available
- Older freighters approaching economic obsolescence

Is Now a Good Time to Invest?

Although . . .

- ✈ Air cargo demand falling in a weak economy
- ✈ Production backlog & recent conversions more than adequate to meet near term demand
- ✈ Credit almost non-existent

Is Now a Good Time to Invest?

Therefore...

- Lessors with '09/10 lease expirations should consider conversion option timed to an expected market recovery in 2010/11

But...

- Speculative feedstock and conversion slot investment is risky & requires careful scrutiny of aircraft types and timing/strength of demand

Conclusions

Why invest?

- Extend useful life
- Higher growth market for right aircraft
- Freighter values less volatile over time

What aircraft types should be considered?

- 2010-13 737 Classic 757 A300-600 767-300ER 747-400
- 2013 & beyond A320 A330-300 777

Is now a good time to invest?

- Feedstock improving, but not yet at the right price point
- Right time to lay the groundwork for a 2011 recovery and consider:
 - ❖ Conversion as an option for candidate aircraft in your existing fleet
 - ❖ Reserving slots timed to improving demand



Advisory role for freighter equity investors

Aircraft acquisition, lease and sale transactional support

Freighter conversion management

Fleet planning

Technical, operating and economic analysis

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