An Air Cargo Perspective and Forecast

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Agenda

- A look back
- A look ahead
  - near term
  - long term
- Freighter fleet
- Conclusions
2010: a better year than expected

- Profits
- Yields/revenues
- Load factors
- Traffic
- GDP
World air cargo traffic continues recovering after high fuel prices and world economic slowdown.

![Graph showing monthly percentage change and average spot jet fuel price over time.](image-url)
World air cargo and containership traffic fell in 2009

World air cargo traffic, RTKs, billions

World maritime dry cargo traffic in containers, RTKs, billions

Comparative traffic growth rate

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Air cargo</td>
<td>3.8%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Dry cargo in containers</td>
<td>8.5%</td>
<td>7.4%</td>
</tr>
</tbody>
</table>
Significant ’09 decline in major world air cargo markets

Annual growth by regional market, percentage

-25%  -20%  -15%  -10%  -5%  0%  5%  10%  15%

- Domestic China
- Latin America – Europe
- Intra-Asia
- Africa – Europe
- Europe – Asia
- Intra-Europe
- South Asia – Europe
- World
- Intra-North America
- Asia – North America
- Latin America – North America
- Middle East – Europe
- Europe – North America
Intra-Asian air cargo growth slowed by recent economic environment

6.7% average annual growth per year
Asia-North America air freight market contracted 12.9% in 2009
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Worldwide air cargo growth “drivers”

- GDP
- Globalization of trade (sourcing, production and marketing)
- Trade liberalization (WTO, regional free-trade agreements)
- ‘Just-in-Time’ management (inventory and competitiveness)
- Agricultural and industrial development leading to wider variety of high-value, low volume products (demand for fully integrated logistics services)
Asia leading transition from recovery to expansion

Based on Global Insight Monthly Interim Forecast (January Update — Annual Real GDP)

World Growth:
- 2009: -1.9%
- 2010: 4.1%
- 2011: 3.7%

Europe:
- European Union: 2010 - 1.8%, 2011 - 1.7%, 2010-20 CAGR - 2.0%
- United States: 2010 - 2.9%, 2011 - 3.2%, 2010-20 CAGR - 2.9%
- Japan: 2010 - 4.3%, 2011 - 1.2%, 2010-20 CAGR - 1.2%
- China: 2010 - 10.2%, 2011 - 9.5%, 2010-20 CAGR - 8.3%
- Other Asia: 2010 - 7.4%, 2011 - 4.5%, 2010-20 CAGR - 4.4%
- Latin America: 2010 - 5.4%, 2011 - 4.5%, 2010-20 CAGR - 4.6%
- Mexico: 2010 - 5.4%, 2011 - 3.9%, 2010-20 CAGR - 3.8%
- Middle East: 2010 - 4.3%, 2011 - 5.5%, 2010-20 CAGR - 4.5%
- Other Europe: 2010 - 3.8%, 2011 - 3.2%, 2010-20 CAGR - 3.2%
- Canada: 2010 - 2.9%, 2011 - 2.8%, 2010-20 CAGR - 2.7%
- Russia and CIS: 2010 - 4.4%, 2011 - 4.6%, 2010-20 CAGR - 3.7%
- India: 2010 - 8.5%, 2011 - 8.3%, 2010-20 CAGR - 8.6%
- Africa: 2010 - 4.4%, 2011 - 5.0%, 2010-20 CAGR - 4.7%
- Australia/NZ: 2010 - 2.5%, 2011 - 2.5%, 2010-20 CAGR - 3.0%

2009 GDP, Billions U.S. Dollars

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World air cargo returning to 2007 “peak” traffic levels

Annual Percentage Change in Cargo Traffic Over Prior Year

World Air Cargo Traffic, Revenue Tonne Kilometer (RTK), billions

-20% -15% -10% -5% 0% 5% 10% 15% 20%


-20% -15% -10% -5% 0% 5% 10% 15% 20% 25% 30%

-20% -15% -10% -5% 0% 5% 10% 15% 20% 25% 30%

% Traffic Change
% Forecast Traffic Change
Actual Traffic, RTKs
Forecast Traffic, RTKs

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Forecasted average 20-year regional & key country GDP growth rates

<table>
<thead>
<tr>
<th>Region</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>People’s Republic of China</td>
<td>7.4%</td>
</tr>
<tr>
<td>Africa</td>
<td>4.4%</td>
</tr>
<tr>
<td>Asia*</td>
<td>4.4%</td>
</tr>
<tr>
<td>Middle East</td>
<td>4.0%</td>
</tr>
<tr>
<td>Latin America</td>
<td>4.0%</td>
</tr>
<tr>
<td>North America</td>
<td>2.7%</td>
</tr>
<tr>
<td>Europe</td>
<td>1.9%</td>
</tr>
<tr>
<td>Japan</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

* Includes People’s Republic of China and Japan
Asian economic power distribution shifts dramatically towards China.

*Thailand, Malaysia, Singapore, Philippines, and New Zealand
World air cargo traffic will triple over the next 20 Years

Average annual growth percentage

2009 to 2029

- High: 6.6%
- Base: 5.9%
- Low: 5.2%

1.9% growth per year
Asia air cargo markets continue to lead industry growth

- **North America-Asia**: 4.2% growth
- **Europe-Asia**: 3.0% growth
- **Intra Asia**: 9.2% growth
- **North America**: 5.6% growth
- **North America-Europe**: 5.7% growth
- **Domestic China**: 6.5% growth
- **Europe-Latin America**: 6.0% growth
- **Europe-Middle East**: 5.1% growth
- **Europe-S Asia**: 6.1% growth
- **Intra Asia**: 6.5% growth

2009 RTKs and 2010-2029 RTKs comparison.
Top 10 economy pairs constitute nearly one-half of the intra-asia market

Top economy pairs for intraregional air cargo traffic

1. China – Korea
2. Japan – Korea
3. Hong Kong – Taiwan
4. China – Japan
5. Hong Kong – Japan
6. Korea – Hong Kong
7. Japan – Taiwan
8. Australia – Singapore
9. China – Hong Kong
10. Singapore – Hong Kong
Intra-Asia air cargo market will grow at 7.9% per year

Average annual growth, 2009-2029
- High: 9.4%
- Base: 7.9%
- Low: 6.4%

3.4% growth per year
Freighter fleet increase reflects world traffic growth

- Standard-body (<45 tonnes)
- Medium widebody (40-80 tonnes)
- Large (>80 tonnes)

2009:
- Standard-body: 37%
- Medium widebody: 36%
- Large: 27%

2029:
- Standard-body: 40%
- Medium widebody: 27%
- Large: 33%
The percentage of new to converted freighters grows with aircraft size

Total 2,494 Units Delivered (1,751 Converted, 743 Production)

- **Large**
  - Total: 770
  - Converted: 250
  - New: 520

- **Medium Widebody**
  - Total: 640
  - Converted: 210
  - New: 430

- **Standard-body**
  - Total: 1,080
  - Converted: 1,070
  - New: 10

- Standard-body (<45 tonnes)
- Medium widebody (40-80 tonnes)
- Large (>80 tonnes)
Freighter deliveries vary by region with a reliance upon ‘large size’ for Asia-Pacific carriers.
Comparison of historic ‘WACF’ and actual traffic results

Year of Publication

- WACF 1986
- WACF 1987
- WACF 1988
- WACF 1989
- WACF 1990
- WACF 1992
- WACF 1993
- WACF 1994
- WACF 1995
- WACF 1996/1997
- WACF 1998/1999
- WACF 2000/2001
- WACF 2002/2003
- WACF 2004/2005
- WACF 2006/2007
- WACF 2008/2009

Actual World Air Cargo Traffic

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Large freighter fleet modernization has been especially rapid since mid-2008

Source: Ascend database, Boeing as of October 2010
Boeing’s complete freighter offering

Revenue Payload, lb

Range, nmi

Revenue Payload, Metric Tons

- 747-8F
- 747-400BCF
- MD-11BCF
- 777-200BCF*
- 767-300BCF*
- 737-300SF
- 737-400SF

*Note: Product Development Study
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Air cargo industry challenges

- Global economic uncertainty
- Fuel price volatility
- Modal diversion
- Environmental responsibility
- Security requirements
Air Cargo Perspective and Forecast

Conclusions

- After the worst-ever downturn, world air cargo has made a remarkable recovery, demonstrating its vital role in global commerce

- Air cargo industry fundamentals remain sound: imperative for reliability/speed, continued product innovation and global interdependence

- World air cargo traffic levels will triple over the next two decades with long-haul markets tied to Asia leading growth

- The world freighter fleet will expand by more than two-thirds to nearly 3000 aircraft by 2029

- Ongoing large freighter fleet modernization will make air cargo more competitive via improved economics
“2010-2011 World Air Cargo Forecast” web access

www.boeing.com/commercial/cargo