Agenda

- Current state of the world air cargo market
- Long-term cargo (2013-2033) market forecast
- Freighter fleet forecast (2013-2033)
World air cargo traffic growth has been steadily recovering since 2Q 2013

World air cargo traffic grew 4.1% in November 2014

Sources: IATA Carrier Tracker (industry international scheduled freight) and A4A US domestic cargo traffic.
Global economic growth strengthening in 2015-2016
Real year-over-year GDP growth (%)

- Economic growth anemic since 2011
  - Centered in US, Europe – key consumer, export markets
  - Weak trade growth, particularly in air cargo commodities
- Economic, trade growth now improving led by US

Source: IHS Economics
Air cargo demand has been recovering

- Air cargo growth stalled in mid-2011
  - Weak economy
  - Trade growth slowed
  - Economic uncertainty
- Growth resumed mid-2013 as the world economy strengthened
- Continued improvement expected in 2015
  - 4.1% Nov 2014 vs Nov 2013
  - 4.4% Nov 2014 YTD

Sources: IATA Carrier Tracker (Industry International Scheduled Freight) & IATA US Domestic Cargo Traffic account for 87.7% of the world RTKs.
Air cargo growth rates are accelerating, but vary widely by region and airline business model

November 2014 year-to-date

Variance of Air Cargo RTKs flown by carrier region, 2014 versus 2013

<table>
<thead>
<tr>
<th>Region</th>
<th>Variance 2014</th>
<th>Variance 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>14.5%</td>
<td>-</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>4.0%</td>
<td>-</td>
</tr>
<tr>
<td>PRC Carriers</td>
<td>19.9%</td>
<td>(1.5%)</td>
</tr>
<tr>
<td>Europe</td>
<td>0.8%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Express Carriers</td>
<td>(1.5%)</td>
<td>0.6%</td>
</tr>
<tr>
<td>Latin America</td>
<td>7.8%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Middle East</td>
<td>11.1%</td>
<td>-</td>
</tr>
<tr>
<td>North America</td>
<td>7.8%</td>
<td>-</td>
</tr>
</tbody>
</table>

Sources: IATA Carrier Tracker (Industry international scheduled freight), A4A US domestic cargo traffic, and Boeing analysis

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World scheduled air freight grew 0.5% in 2013

RTKs, billions

North America
Latin America
CIS
Europe
Africa
Middle East
Asia
World charter air freight grew 2.9% in 2013

RTKs, billions

North America
Latin America
Middle East
Europe
CIS
Africa
Asia

The international express market is growing faster than international freight and mail

RTKs, billions
Express service dominates the US domestic air cargo market

R TKs, billions

- Express carriers
- Mail
- Charter freight
- Scheduled freight

Trucking and Air Cargo Traffic Are Recovering at a Slow Rate

Sources: IATA, ACMG and American Trucking Associations

*Figures include for-hire and private carriage
Air cargo has maintained its market share in the key trans-Pacific cargo market

Top 20 air cargo commodities for the Asia–North America market

SOURCE: US DOC Foreign trade data
Yields have been improving
Asia markets will continue to lead industry growth

RTKs, billions

- Asia-North America: 3.1% growth
- Europe-Asia: 6.5% growth
- Intra Asia: 2.1% growth
- Europe-North America: 6.7% growth
- North America: 4.8% growth
- Domestic China: 5.2% growth
- Europe-Latin America: 4.3% growth
- Latin America-North America: 4.7% growth
- Africa-Europe: 4.3% growth
- South Asia-Europe: 4.7% growth
- Middle East-Europe: 4.0% growth
- Intra-Europe: 2.0% growth

Annual growth %

- 2013 RTKs: 5.4%
- 2014–2033 RTKs: 5.3%
## Freighter size categories

<table>
<thead>
<tr>
<th>Standard body</th>
<th>Medium widebody</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 45 tonnes</td>
<td>40–80 tonnes</td>
<td>&gt; 80 tonnes</td>
</tr>
<tr>
<td>707</td>
<td>767 series</td>
<td>747 series</td>
</tr>
<tr>
<td>727 series</td>
<td>787</td>
<td>777 series</td>
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<tr>
<td>737 series</td>
<td>A300 series</td>
<td>A350</td>
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<tr>
<td>757</td>
<td>A310 series</td>
<td>AN-124</td>
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<tr>
<td>A320 series</td>
<td>A330 series</td>
<td>II96-T</td>
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<tr>
<td>BAe-146</td>
<td>DC-10 series</td>
<td>MD-11</td>
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<td>DC-8 series</td>
<td>II-76TD</td>
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<td>DC-9 series</td>
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<tr>
<td>MD-80 SF</td>
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<tr>
<td>Tu-204</td>
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</tbody>
</table>
Freighter fleet forecast methodology

World Air Cargo Forecast
Projected traffic

minus

Current Market Outlook
Passenger and combi airplane forecast

equals

Freighter airplane requirement

Total cargo
Demand

Lower-hold lift
Supply

Needed freighter lift
Supply
New freighter demand -- 840 new, 1,330 converted

- **Share of fleet**: 2013 - 1,690 / 2033 - 2,730

- **Delivery units**:
  - 2014 to 2033 Freighters
  - Large production >80 tonnes: 590
  - Wide-body conversions 40-120 tonnes: 370
  - Medium wide-body production 40-80 tonnes: 960
  - Standard-body conversions <45 tonnes: 250
Freighter fleet additions for growth and replacement

Freighter aircraft, units

2013

2033

Current/retained fleet

Replacement 1,130

Growth 1,040

Fleet additions 2,170 units

560

1,690

1,500

1,000

500

0
Asia leads in total deliveries; North America follows
Large Freighters to General Carriers; Medium Widebodies for Express

- Large Freighters: 588 units (82% All-Cargo+Combination, 15% Express Carriers, 3% Miscellaneous Airline Groups)
- Medium Widebody Production: 254 units (58% All-Cargo+Combination, 32% Express Carriers, 10% Miscellaneous Airline Groups)
- Widebody Conversions: 364 units (40% All-Cargo+Combination, 25% Express Carriers, 35% Miscellaneous Airline Groups)
- Standard-body: 962 units (44% All-Cargo+Combination, 39% Express Carriers, 17% Miscellaneous Airline Groups)

2014-2033 new and converted
More than half of air cargo traffic is carried on freighters
Percentage of world RTKs carried on freighters

SOURCES: IATA, ICAO, Company reports, Boeing research
Freighters will remain the leading cargo capacity provider

Freighter service advantages over passenger belly

- Cargo focus and control
- Timing and routing
- Capacity (volume, weight, hazmat & dimensional)
- Handling location and ramp proximity
- Reliability and predictability
Lower-Hold and Main-Deck Split

Annual RTKs (billions)

- 56% Freighter
- 44% Lower Hold
- 50% Lower Hold
- 50% Freighter
- 41% Lower Hold
- 5% Growth
- 4% Growth

2012

2032
Slow trade, air cargo growth was mostly driven by weak demand growth.

World air cargo traffic recovering.

World air cargo traffic forecast to grow 4.7% per year through 2033.

Freighters will remain the leading cargo capacity provider.
World Air Cargo Forecast 2014-2015

www.boeing.com/commercial/cargo
Thank You!