Agenda

ATLAS AIR WORLDWIDE

GLOBAL AIRFREIGHT TRENDS

CIVIL RESERVE AIR FLEET (CRAF)

CRITICAL ENABLERS
About Atlas Air Worldwide
A Strong Leader in a Vital Industry

THE INDUSTRY
Airfreight is vital to global trade growth

~$6.7 trillion of goods airfreighted annually; ~35% of total world trade

Higher-growth e-Commerce and express markets demand dedicated freighter services

Significant growth in U.S. domestic air markets

High-value, time-sensitive inventories demand airfreight-based supply chain

Airfreight provides a compelling value proposition

ATLAS
Modern, reliable, fuel-efficient fleet

Differentiated fleet solutions: 747, 777, 767, 757, 737

Strong portfolio of long-term customers committed to further expansion

Operating on five continents

Serving the entire air cargo supply chain

Unique integrated value proposition

High degree of customer collaboration

Focused on innovation and thought leadership
NASDAQ listed | Southern Air integration into Atlas Air underway | Titan expanding leasing activities
# Diversified Customer Base

**LONG-TERM, PROFITABLE RELATIONSHIPS**

<table>
<thead>
<tr>
<th>SHIPPERS</th>
<th>FORWARDERS</th>
<th>AIRLINES</th>
<th>EXPRESS</th>
<th>SPORTS CHARTERS</th>
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<tbody>
<tr>
<td>Amazon</td>
<td>AIR CHARTER SERVICE</td>
<td>AeroLogic</td>
<td>DHL Express</td>
<td>Manchester United, NFL, NBA, MLB, NBA, NFL</td>
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<tr>
<td>Boeing</td>
<td>DB SCHENKER</td>
<td>ASIANA CARGO</td>
<td>China Postal Airlines</td>
<td>Arizona Cardinals, Georgia, Jaguars</td>
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<td>INDITEX</td>
<td>KUEHNE+NAGEL</td>
<td>NCA</td>
<td>Cathay Pacific Cargo</td>
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<td></td>
<td>PANALPINA</td>
<td>Emirates</td>
<td>Qantas Freight</td>
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</tbody>
</table>

**OUR STRENGTHS**

- **Diversified portfolio** of growth-oriented *market leaders*
- Covering the *entire air cargo supply chain*
- High degree of *customer integration*

- Focused on *continuous development and growth*
- **Long-term contractual commitments**
<table>
<thead>
<tr>
<th>Aircraft Type</th>
<th>Quantity</th>
<th>Description</th>
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<td>BOEING 747s</td>
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<td>747-8Fs</td>
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<td>747-400Fs</td>
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<td>BOEING 767/757s</td>
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<tr>
<td>767-200/300Fs</td>
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<td>767-200/300 passenger</td>
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<td>767-300 Freighters Titan</td>
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<td>757-200 Freighter Titan</td>
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<td>BOEING 737s</td>
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<tr>
<td>737-300F Freighter Titan</td>
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<tr>
<td>737-800 Passenger Titan</td>
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<tr>
<td>CMI 777Fs</td>
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<tr>
<td>A+CMI 777F</td>
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<tr>
<td>Titan 777Fs</td>
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Global Operating Network

296,264 Block Hours in 2018
59,292 Flights
382 Airports
89 Countries
Global Presence

296,264 Block Hours in 2018
59,292 Flights
382 Airports
89 Countries
North America Operating Network
Megatrends Will Drive Opportunity in Airfreight

Consuming Class
- Increases in urban consumption by the growing consuming class – increase by 1.8B by 2025
- Global consumption to surpass $30 trillion – increase from $22 trillion today

Express
- Technological breakthroughs at an increasing pace
- Adoption of new technologies
- Change in buying behaviors. e-Commerce related airfreight demand growing significantly

General Air Cargo
- Global flows increasing – trade, finance, people and data
- Tourism and general travel increasing, adding jobs
- Manufacturing moving away from traditional passenger hubs

e-Commerce
- Demographic trends suggest significant growth in Asia, Africa and South America
- Trends will require efficient air networks to serve effectively
- Freighters will play a more important role in the future
Middle class* population, driver of consumption, to move from 2.9 Billion to 4.9 Billion in 20 years.

Implications for e-Commerce and global trade trends.

Middle class defined as households with yearly income between $20,000 and $150,000 at PPP in constant 2016 prices.

Source: Oxford Economics, Airbus
Global Airfreight Drivers

**Market Size**
Airfreight share: 1.5-2.5% global volume, 35% global value

**Products**
High-value, time-sensitive items; items with short shelf lives

**Strategic Choice**
Products/supply chains with just-in-time delivery requirements

**Specialty Consideration**
Products with significant security considerations

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**By Sectors**
Industry Sectors Served by AAWW Customers
- Other
- Automotive: 11%
- Mail & Express: 6%
- Apparel: 10%
- Perishables: 11%
- Intermediate Materials: 16%
- High-Tech Products: 17%
- Capital Goods: 17%
- Live: 1%

**By Region**
Percent of International Freight Tonne Kilometers (FTKs)
- Asia Pacific: 36%
- Europe: 26%
- North America: 18%
- Middle East: 15%
- Latin America: 3%
- Africa: 2%

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By Sectors Chart Source: Atlas research
By Region Chart Source: International Air Transport Association – July 2019
International Global Airfreight – Annual Growth

IATA – International freight tonne kilometers (FTKs) flown up 3.6% in 2018.

IATA REPORTED AIRFREIGHT TONNAGE SLOWING DOWN (In Millions)

- 2013: 51.7
- 2014: 54.0
- 2015: 54.8
- 2016: 57.0
- 2017: 61.5
- 2018: 63.3
- 2019F: 63.1

3.4% CAGR

Total Global Airfreight Tonnage: IATA (June 2019)
The Key Underlying Express Market Is Growing

The International Express market is showing better growth

7.0% CAGR since 2011, well above the pace of general airfreight

Notes: Weighted average of growth rates in international express package volume reported by these express operators
Weighting is 50% DHL, 25% UPS and 25% FedEx. 2016-2017 FedEx reported data reflects beneficial impact of TNT acquisition
e-Commerce Growth

GLOBAL e-COMMERCE SALES
(In $Billions)

- 2011: 590
- 2012: 741
- 2013: 943
- 2014: 1,190
- 2015: 1,433
- 2016: 1,845
- 2017: 2,304
- 2018E: 2,842
- 2019F: 3,453
- 2020F: 4,135
- 2021F: 4,878

23.5% CAGR

GLOBAL e-COMMERCE PENETRATION
(as percentage of global retail sales)

- 2015: 7.4%
- 2016: 8.6%
- 2017: 10.2%
- 2018E: 11.9%
- 2019F: 13.7%
- 2020F: 15.5%
- 2021F: 17.5%

e-Commerce only accounts for ~14% of global retail sales

USA
- 237M internet users
- 73% mobile penetration
- 9% e-Commerce penetration

CHINA
- 700M internet users
- 50% mobile penetration
- 10% e-Commerce penetration

INDIA
- 300M internet users
- 25% mobile penetration
- 2% e-Commerce penetration

Sources: Euromonitor, Forrester, eMarketer, Statista, BofA Merrill Lynch Global Research estimates
The Top-3 Platforms Drive Cross-Border e-Commerce Growth

GLOBAL E-COMMERCE MARKET IN GROSS MERCHANDISE VOLUME (GMV)¹
USD Billion

Source: eMarketer, Company Reports, Accenture

KEY E-COMMERCE PLAYERS ARE INCREASINGLY ACTIVE IN AIR LOGISTICS

JD.COM +77%
AMAZON +32%
ALIBABA +37%

¹ CAGR 2012-2017

2012 2013 2014 2015 2016 2017
747 946 1,196 1,493 1,859 2,337
14% 14% 14% 15% 18% 33%
21% 18% 23% 27% 29% 18%
Cross-Border e-Commerce Is Boosting Volume of Parcels Carried Worldwide

GLOBAL FREIGHT AND EXPRESS CARGO GROWTH, 2006-2018

Index (year 2006=100)

Source: Universal Postal Union; Seabury Express Trade Database; Seabury Consulting analysis

WE HAVE STRONG PRESENCE AND FOCUS ON EXPRESS AND E-COMMERCE
Trade War Has Had Significant Impact
Leading indicators remain positive – Air Cargo demand slowing due to production and geopolitical uncertainty

Sources: Oxford Economics, RTKs: IATA, Boeing Market Analysis
Global Trade & Tariff Effects in 2019

- Tariffs have a significant impact on global trade
- Escalation threats have started to reduce trade in previously unaffected areas
- China (unofficially) retaliating against US carriers regarding applications for new operations
- Manufacturers building up significant inventories and transitioning production capacity to Southeast Asia and Taiwan
Civil Reserve Air Fleet (CRAF)
Civil Reserve Air Fleet – CRAF

- Aircraft committed to the CRAF program can be activated during a wartime or emergency scenario.

- In exchange for participation in the CRAF, carriers are eligible to fly peacetime airlift missions.

- The National Airlift Policy notes that military and commercial resources are equally important and interdependent in fulfillment of the Airlift Objective.

Source: National Airlift Policy (June 24, 1987)
**Source: A3 & A5/8 data  PAA: Primary Authorized Aircraft**

**Source: HQ AMC/A3BC CRAF Capability Summary as of 3 Oct 2019**
CRAF Readiness and Interoperability:
More than Aircraft, Pilots and Cabin Crew

Command and control with DOD Dispatchers / Controllers

Navigate unfamiliar airports

Coordination with 3rd Countries—overfly and permits

Handling Dangerous Goods / Hazmat

Load complexity and ground operations

Cybersecurity and operations assurance

Specialized Staff—load masters, air navigators, planners

Integration at major bases—access, offices, personnel

Train military ground crews
Critical Enablers

OPEN SKIES
FLIGHT & DUTY TIME
UNMANNED AIRCRAFT SYSTEMS
US Pioneered International Aviation Liberalization Through Open Skies

The 1992 U.S. Open Skies Policy Transformed the International Aviation Industry

- Open Skies is the natural evolution of airline deregulation.
- Every U.S. Administration has negotiated additional open skies agreements, recognizing the benefits to both business and consumers.
- These agreements have come under attack by some U.S. carriers who want to limit Open Skies agreements.
- The current Administration reaffirmed its support for Open Skies policy.
Open Skies Is Good Policy

**What They Are**
- Agreements between two countries that create open, competitive markets for international air travel
- The U.S. currently has over 126 Open Skies Agreements with a broad range of countries such as Brazil, Japan, El Salvador, and the European Union

**What They Do**
- Promote competition in the international aviation sector by enabling airlines, not governments, to make decisions about routes, capacity, frequency, and pricing of their services, based on market demand
- Provide rights for airlines to offer international passenger and cargo services

**Why They Matter**
- Increase choice and reduce costs for consumers
- Support American jobs
- Facilitate exports for U.S. businesses
- Enhance U.S. national security
Open Skies Is An Essential Component of Military Readiness

U.S. carriers rely on the freedoms provided under Open Skies to maintain global delivery networks that enable them to transport troops and vital supplies for the U.S. military.

90% Share of the U.S. forces transported by commercial carriers to and from Iraq.

40% Share of equipment, supplies, and food transported by commercial carriers to support American operations in Iraq, Afghanistan, and the Persian Gulf.
Flight & Duty Time: One Size Does Not Fit All

FAA determined repeatedly that all-cargo airlines should be excluded from flight and duty time rules for passenger airlines.

- All-cargo carriers operate differently than network carriers
- Fatigue Risk Management Plan is smart regulation
- Ruling provides for an *optimal* level of safety

All-cargo carriers proactively manage fatigue risk

- Paid pilot commuting
- Cargo pilots fly significantly less hours per month
- Data driven sleep science is dynamic – always improving

Revised Rules would also exacerbate global pilot shortage

- More difficult for DoD to retain aviation workforce
- 20% increase in pilots required for all cargo carriers
UAS - A Revolution in Aerospace Technology

UAS innovation has accelerated in recent years

New applications continue to proliferate

UAS will transform aviation and many other sectors
Implications for Transportation and Logistics

Several Atlas Air customers are exploring “last mile” delivery services with UAS

Non-aerospace companies are becoming industry players

Complex regulatory issues must be resolved
Looking Ahead: Open Questions for the Air Cargo Industry

Near- and medium-term

How will changes in the “last mile” precipitated by UAS affect the upstream supply chain including air freight and express services?

What are the effects on and implications for the aviation workforce?

Complex regulatory issues must be resolved.

Long-term

How and when will UAS innovation change large transport aircraft?

How will autonomy effect demand for traditional air cargo services?
Thank You