



A HISTORIC, TRANSFORMATIVE YEAR



Frederick McCorkleChairman of the Board
April 17, 2017

As we move more deeply into the fast-growing express and e-commerce markets, our scale and scope of operations will grow more than it ever has in previous years.

TO OUR SHAREHOLDERS:

2016 was a truly historic and transformative year for Atlas Air Worldwide.

In keeping with our commitment to drive value for our shareholders and our vision to be our customers' most trusted partner, we capitalized on several strategic opportunities to further strengthen our position as the leader in international aviation outsourcing.

In April, we acquired Southern Air in a highly complementary transaction that expands our platform into 777 and 737 operations and provides our customers with access to a broader array of aircraft and operating services.

A month later, we reached agreement to provide air transport services for leading e-commerce retailer Amazon. In addition to leasing and operating twenty 767-300 freighters to Amazon in support of package deliveries to its customers, our arrangements provide for future growth of the relationship as Amazon may increase its business with us.

In September, by an affirmative vote of approximately 99.9% of the votes cast, our shareholders approved the issuance to Amazon of warrants to acquire up to 30% of the common shares of the company. The warrants granted to Amazon are part of the inherent value creation and alignment of interest designed to strengthen our long-term relationship.

The Southern Air and Amazon initiatives are just two examples of our commitment to capitalizing on profitable opportunities during what is a new era of business growth and development for the company.

We are moving more deeply into the fast-growing express and e-commerce markets. At the same time, we continue to serve heavy airfreight with unparalleled service and to grow our relationships with our other strategic customers.

As a result, our scale and scope of operations will grow more than it ever has in previous years. Our fleet will expand significantly. We will be flying new routes to new stations. And we will be providing new services to new customers.

As in the past, our diversification and development strategy is designed to respond to profitable opportunities and produce attractive earnings.

Underlying our efforts is a commitment to a set of core values that focus on safety, security and compliance; customer service; continuous improvement; teamwork; and always communicating our plan.

Driving our execution are:

- An experienced, dedicated team of employees focused on our customers' expectations;
- → A modern, superior fleet tailored to meet our customers' unique needs;
- Unrivaled value-added global operating services; and
- A solid financial structure.

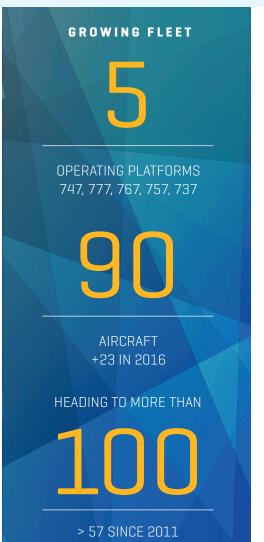
FINANCIAL AND OPERATING HIGHLIGHTS [\$ in millions, except per share]	For the Year Ended		
	12/31/16	12/31/15	% Change
Operating revenues	\$ 1,839.6	\$ 1,822.7	0.9
Income from continuing operations, net of taxes	42.6	7.3	483.6
Adjusted income from continuing operations, net of taxes ¹	114.3	125.3	8.8)
Diluted EPS from continuing operations	1.70	0.29	486.2
Adjusted diluted EPS from continuing operations ¹	4.50	5.01	(10.2
Total assets	\$ 4,247.4	\$ 4,164.4	2.0
Debt obligations	1,851.4	1,901.3	[2.6
Stockholders' equity	\$ 1,517.3	\$ 1,454.2	4.3
Aircraft fleet (total) ²	90.0	67.0	34.:
Block hours	210,444	178,060	18.

¹Adjusted income from continuing operations, net of taxes and adjusted diluted EPS from continuing operations are non-GAAP measures that exclude certain items. See Page 45 of our 2016 Annual Report on Form 10-K, included with this Annual Report to Stockholders, for a reconciliation to the most directly comparable financial measures in accordance with GAAP.

²Includes customer-owned aircraft operated by the company.

As we move forward and build upon the successes of 2016, we are fortunate to be guided by a skillful management group, led by Chief Executive Officer, Bill Flynn.
Supporting Bill are our Chief Operating Officer, John Dietrich; Chief Commercial Officer, Michael Steen; Chief Financial Officer, Spencer Schwartz; and General Counsel, Chief Human Resources Officer and Secretary, Adam Kokas.

Our management team, along with our customer-focused cadre of employees, have proven the effectiveness of our mission and strategy. Recognizing the quality and depth of our leadership and the significance of our achievements, Airline Economics named Atlas Air



Worldwide 2016's Airline Management Team of the Year.

Moving forward, the transformation of our company continues.

We will deepen our presence in existing markets, diversify our business mix by capitalizing on opportunities in new ones, and continue to offer innovative new airfreight solutions and services that benefit both our customers' and our revenue streams.

The future has never looked brighter. My fellow board members and I have the highest levels of confidence that Bill, his senior team, and all our employees will continue to strengthen the reputation for quality, innovation, and growth that is Atlas Air Worldwide.



04:00 | Touchdown HKG

Hong Kong is a key global hub in the express, e-commerce and airfreight markets, and a keystone in our global operating network.



• 04:15 | Unloading

Our broad array of 747, 777, 767, 757 and 737 aircraft helps us meet and exceed our customers' expectations, whether they're shipping an overnight package or oversized heavy equipment.



◆ 05:00 | Tune-up

Expert technicians and ground support staff around the globe enable us to deliver against aggressive customer service quality goals, while maintaining a safe and compliant operation.



♦ 05:30 | Fuel-up

The operating efficiency of our 747-8Fs, -400Fs, and 777Fs, including their superior fuel efficiency, range, capacity and loading capabilities, creates a compelling value proposition for our customers and positions us well in the marketplace.

OUR FLEET IS ALIGNED WITH THE GROWING

▼ 05:45 | Handling

State-of-the-art aircraft, including our nose-door 747s, help ensure safe and reliable handling of all cargo and express packages. We also handle oversized, unusual, or high-maintenance goods that require special care.



• 06:15 | Loading

Our loading procedures focus on safe handling while maximizing efficiency of all cargo to meet the demands of today's growing express, e-commerce and airfreight markets



◆ 06:30 | Logistics

With our 24-hour operations control center and regional sales offices around the world, we can quickly respond to customer requests, additions, reschedules and reroutes. Our customer website provides live flight tracking and online changes.



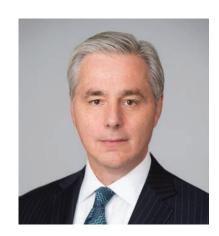
◆ 07:00 | Takeoff

EXPRESS AND E-COMMERCE MARKETS

Thanks to our advanced aircraft, capable pilots and crew, on-ground efficiency, and superior flight planning and routing capabilities, our on-time delivery record is one of the highest in the industry.



BUILDING ON OUR COMMITMENT



William J. Flynn
President and CEO
April 17, 2017

TO OUR SHAREHOLDERS:

Building on our previous successes and our commitment to pursue strategic growth opportunities, we made several decisions in 2016 that are among the most important in the history of Atlas Air Worldwide.

We continued to expand our presence in the e-commerce and express markets, which continue to demonstrate robust growth.

To that end, we entered into an exciting long-term commercial relationship with Amazon to support the ongoing expansion of its e-commerce business and to enhance its customer delivery capabilities.

"Amazon One," our first aircraft for Amazon and the first in its new "Prime Air" livery, began operations in August, followed by a second aircraft in early 2017. We have secured all 20 of the aircraft and conversion slots required for Amazon, and will ramp up to full service through 2018.

MORE ACHIEVEMENTS

Another example of our commitment to growth is our acquisition of Southern Air. The addition of its 10-aircraft, 777 and 737 CMI operating platforms generated immediate earnings accretion in 2016 and further expanded our business base in the dynamic express and e-commerce sectors, both of which rely on airfreight and dedicated freighter services.

Also in 2016 we completed an agreement to operate a 747-400 freighter for Nippon Cargo Airlines, with an opportunity for additional aircraft in the future. Similarly, we entered into an agreement in early 2017 to operate one of our 747-400 freighters for Asiana Cargo.

While expanding our customer base and presence in key markets, we continue to focus on strengthening relationships with our current valued customers.

For example, we entered a five-year agreement with FedEx Express to provide five 747-400 freighter aircraft for its peak flying seasons beginning in 2017. We have worked closely and successfully with FedEx for many years, but this agreement allows both companies to plan for the longer term.

Our customers recognize and appreciate our commitment to meeting or exceeding their needs. One example we are especially proud of is being named, for the fourth consecutive year, *Payload Asia's* Leasing Provider of the Year and Charter Operator of the Year.

As always, these and other accomplishments were made possible by a dedicated team of employees—crewmembers and ground staff—who commit their skills and talents to fulfilling our mission of being our customers' most trusted partner.

OUR PERFORMANCE

2016 ended on a strong note, capped by a fourth quarter in which we delivered record revenues and adjusted earnings and generated both sequential

We are entering a new era of significant business growth and development, ... well-positioned to drive value and benefits for customers and to grow earnings and cash flow for shareholders.

and year-over-year improvements in our block-hour volumes and margins.

Both operationally and financially, our full-year performance reflected the leadership and strength of our ACMI and Charter businesses, the annuity-like contribution of our Dry Leasing operations, ongoing efficiency and productivity initiatives, and a disciplined balance sheet focus.

On an adjusted basis, income from continuing operations, net of taxes, totaled \$114.3 million, or \$4.50 per diluted share, in 2016. Primarily due to charges associated with a benefit plan change in control and transaction-related expenses, our continuing operations generated income of \$42.6 million, or \$1.70 per diluted share, on a reported basis.

Both adjusted and reported results in 2016 reflected better contributions and synergies from Southern Air than originally anticipated as well as an increase in military passenger and cargo demand. Results also reflected the impact of startup expenses and initial warrants related to our new service for Amazon, which we

expect to become accretive in 2017 and to be meaningfully accretive to our earnings and cash flows over time.

LOOKING AHEAD

We are a stronger company today. We are entering a new era of significant business growth and development.

As we move ahead, we are optimistic that airfreight will continue to grow from its current record levels. It is a vital component of global macroeconomic and social development, and a fundamental vehicle in global trade.

With our expanding business base and the ongoing development of our strategic platform, we are also driving more deeply into the faster-growing express and e-commerce markets.

Led by the strength of our brand and our global market leadership in outsourced aircraft and services, our acquisition of Southern Air, our long-term agreements with Amazon, and deeper business relationships, we are well-positioned to drive value and benefits for our customers and to grow earnings and cash flow for our shareholders.

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GROWING GLOBAL FOOTPRINT

210,444

BLOCK HOURS 2011-2016 CAGR:² 9.0%

39,882

FLIGHTS 2011-2016 CAGR:² 13.7%

425

AIRPORTS +173 SINCE 2011

119

COUNTRIES +25 SINCE 2011

²COMPOUND ANNUAL GROWTH RATE

TOTAL FLEET: 90 OPERATING FLEET: 81

42 BOEING 747s

10 747-8Fs

- 24 747-400Fs
- 4 Boeing Large Cargo Freighters (LCFs)
- 4 747-400 passenger



11 BOEING 777s

All 777-200LRFs 5 CMI 6 Titan





30 BOEING 767/757s

23 767-200/300Fs* 6 767-200/300 passenger







7 BOEING 737s

5 737-400Fs

- 1 737-300F Titan
- 1 737-800 passenger Titan



*includes to-be-converted aircraft

PARTNERING WITH THE BEST



















































































CORPORATE INFORMATION

BOARD OF DIRECTORS

FREDERICK McCORKLE

Chairman of the Board Atlas Air Worldwide Holdings, Inc. Independent Businessman, Lieutenant General, Retired United States Marine Corps

ROBERT F. AGNEW

President & Chief Executive Officer Morten Beyer & Agnew

TIMOTHY J. BERNLOHR

Managing Member
TJB Management Consulting, LLC

CHARLES F. BOLDEN, JR.

Independent Businessman, Major General, Retired United States Marine Corps

WILLIAM J. FLYNN

President & Chief Executive Officer Atlas Air Worldwide Holdings, Inc.

JAMES S. GILMORE, III

Attorney at Law & Business Consultant Former Governor of Virginia

BOBBY J. GRIFFIN

Former President, International Operations Ryder System, Inc.

CAROL B. HALLETT

Of Counsel
U.S. Chamber of Commerce

DUNCAN J. MCNABB

Independent Businessman, General, Retired United States Air Force

JOHN K. WULFF

Former Chairman Hercules Incorporated, Former Chief Financial Officer Union Carbide Corporation

EXECUTIVE MANAGEMENT

WILLIAM J. FLYNN

President & Chief Executive Officer

JOHN W. DIETRICH

Executive Vice President & Chief Operating Officer;
President & Chief Operating Officer,
Atlas Air, Inc.

ADAM R. KOKAS

Executive Vice President, General Counsel, Chief Human Resources Officer & Secretary

SPENCER SCHWARTZ

Executive Vice President & Chief Financial Officer

MICHAEL T. STEEN

Executive Vice President & Chief Commercial Officer; President & Chief Executive Officer, Titan Aviation Holdings, Inc.

COMPANY INFORMATION

STOCK EXCHANGE

The common stock of Atlas Air Worldwide Holdings, Inc. is traded on the NASDAQ Global Select MarketSM under the symbol AAWW.

CORPORATE OFFICE

Atlas Air Worldwide Holdings, Inc. 2000 Westchester Avenue Purchase, New York 10577-2543

INDEPENDENT ACCOUNTANTS

PricewaterhouseCoopers LLP New York, New York

STOCK TRANSFER AGENT

Computershare
P.O. Box 43078
Providence, RI 02940-3078
Telephone: 1-877-296-3711
[Inside U.S., U.S. territories & Canada]
Telephone: 1-201-680-6578
[Outside U.S., U.S. territories & Canada]
www.computershare.com/investor

WERSITE

www.atlasair.com

INVESTOR INFORMATION

Securities analysts and investors may write to Investor Relations at the Corporate Office, call 1-914-701-8200, or email InvestorRelations@atlasair.com.



