

ATLAS AIR WORLDWIDE

ANNUAL REPORT 2019



Leading the Way Forward

FINANCIAL AND OPERATING HIGHLIGHTS [\$ in millions, except per share]	For the Year Ended		
	12/31/2019	12/31/2018	% Change
Operating revenue	2,739.2	2,677.7	2.3
Adjusted EBITDA ¹	504.8	551.3	(8.4)
Income (loss) from continuing operations, net of taxes	(293.1)	270.6	(208.3)
Adjusted income from continuing operations, net of taxes ¹	139.6	204.3	(31.7)
Diluted EPS from continuing operations	(11.35)	5.22	(317.4)
Adjusted diluted EPS from continuing operations, net of taxes ¹	5.24	7.27	(27.9)
Total assets	5,385.6	5,534.8	(2.7)
Debt and finance leases	2,380.7	2,469.8	(3.6)
Stockholders' equity	1,792.2	2,068.0	(13.3)
Aircraft fleet (total) ²	123	112	9.8
Block hours	321,140	296,264	8.4

Atlas Air Worldwide Holdings, Inc. [Nasdaq: AAWW] is a global leader in innovative, outsourced aviation services.

Leading express and e-commerce delivery providers, shippers, freight forwarders, airlines, military, charter and dry-lease customers rely on us and our broad array of 747, 777, 767 and 737 aircraft to increase fleet flexibility and network efficiency and to drive an expanded global presence.

¹ Adjusted EBITDA, adjusted income from continuing operations, net of taxes, and adjusted diluted EPS from continuing operations, net of taxes, are non-GAAP measures that exclude certain items. See Page 43 and Page 44 of our 2019 Annual Report on Form 10-K, included with this Annual Report to Shareholders, for a reconciliation to the most directly comparable financial measures in accordance with GAAP.

² Includes customer-owned aircraft operated by the company.



William J. Flynn
Chairman of the Board
May 7, 2020



John W. Dietrich
President and
Chief Executive Officer
May 7, 2020

To Our Shareholders:

Inventive, adaptive and forward-thinking, Atlas Air Worldwide is a leading global provider of outsourced aircraft and aviation operating services. With service to 400 destinations in 90 countries, the scale and scope of our operations are unrivaled. As such, Atlas is well-positioned to navigate through the current economic uncertainty and coronavirus outbreak, and to play an important role in the movement of essential goods around the world, particularly during these times of need. There are so many people who depend on the goods we carry, including supplies and daily necessities, now more than ever.

Leading the way forward, we continue to leverage our core competencies and market leadership to execute on strategic opportunities and initiatives, and further shape our future.

Our Business View and Our Outlook

Though the spread of the novel coronavirus has created ongoing uncertainty, our business view and outlook remains positive and is focused on several important themes.

- Airfreight is and will continue to be a long-term growth industry that is a critical part of the global supply chain, providing businesses and communities with timely access to the goods they require—from parts and materials used in manufacturing processes to food, pharmaceuticals, supplies and other necessities people rely on.
- Atlas is well-positioned as an industry leader with a modern and diversified fleet of aircraft, long-standing strategic customers, and an extraordinary workforce. We can also be a driver of positive economic and social impact, both near-term and long-term.
- As we move the business forward, we will continue to manage our costs and best align our resources with our strategic priorities, with a focus on growth customers and opportunities that generate the best returns.

Our thoughts about the strength of our business and the future begin with the company's strategic principles.

First, and always, maintaining safety, security and compliance is our top corporate priority. We will continue to promote a safe, compliant operation in everything we do.

We also have a tremendous team of highly experienced, customer-focused employees who bring diverse skill sets to help us drive our business forward.

We have a strong core of long-term customers, and we play a key role in their operating networks.

These are customers that we value, including DHL, Amazon, Asiana, Boeing, FedEx, NCA, Qantas, UPS, the U.S. military and the NFL, as well as many other airlines, freight forwarders, charter brokers, sports teams and direct shippers.

We have a modern, diversified fleet that provides customers the biggest and broadest array of aircraft for international, regional and domestic cargo and passenger operations.

We are a major player in express, e-commerce, the U.S. military and fast-growing markets. We are also a significant player in the transpacific, the growing market between South America and the rest of the world, and in the U.S.

Driving Value to Customers and Shareholders



We are constantly focused on operating efficiencies, cost management, and the on-time performance that our customers expect. Similarly, we are focused on ensuring that our resources are put to the most profitable use.

And we have a disciplined capital allocation strategy, with a focus on maintaining a strong balance sheet.

2019 Developments

With our principles firmly set, we continued to strengthen our leadership position in global aviation outsourcing during 2019.

We expanded our strategic relationship with Amazon and now operate five 737-800 freighters on a CMI basis, complementing the 19 767-300 cargo aircraft we already lease to them and the 17 we fly for them. And we have the potential to operate additional aircraft for them in the future.

We also increased our 777F service for DHL Express in 2019, expanded our 747F operations for Asiana Cargo and Nippon Cargo Airlines, and added a new 747-400 freighter service for EL AL in early 2020.

We continued to see solid demand for our military and commercial passenger charter services during the year, and acquired a supplementary passenger 747 to perform additional flying for the U.S. military and NFL teams.

While operating aircraft is the cornerstone of what we do, growing our freighter-centric dry-leasing business has been a strategic priority since launching Titan Aviation Holdings in 2009.

Our newly formed joint venture between Titan and Bain Capital Credit is an exciting step along that growth path. Over the next several years, the joint venture intends to develop a diversified freighter-aircraft leasing portfolio with an anticipated value of approximately \$1 billion.

Importantly, the joint venture is consistent with our corporate strategy, aiming to capitalize on the growing demand for cargo aircraft in the express and e-commerce markets.

Our 2019 Performance

Notwithstanding a challenging airfreight environment in 2019, our results reflected a fourth-quarter peak season that included a pickup in customer demand and improved yields compared with the middle of the year. They also reflected our team coming together to deliver the high-quality services that our customers appreciate.

We flew our highest block hours ever—321,140—in 2019, and we delivered record operating revenue of \$2.74 billion.

We also generated earnings on an adjusted basis that were among the best in company history—adjusted EBITDA¹ of \$504.8 million and adjusted income from continuing operations, net of taxes,¹ of \$139.6 million, or \$5.24 per diluted share.

On a reported basis, our full-year results reflected a loss from continuing operations, net of taxes, of \$293.1 million, or \$11.35 per diluted share, which included a noncash special charge of \$638.4 million [\$503.1 million after tax], partially offset by an

unrealized gain on financial instruments of \$75.1 million.

Positioned for the Future

Though these are extraordinary times, with the future uncertainty caused by the novel coronavirus, we believe Atlas Air Worldwide is well-positioned for continued success in 2020 and beyond.

As history has taught us through other crises, airfreight plays a key role in not only delivering relief supplies in times of need, but also in facilitating the movement of goods as the global supply chain rebalances. In fact, airfreight typically rebounds more quickly during periods of economic recovery.

We have a strong core of long-term customers, and we play an important role in their operating networks, especially as they navigate challenging times.

We have a strategic focus on faster-growing global airfreight markets, and will continue to leverage our significant commercial charter business to capitalize on demand.

Together with the exceptional teamwork of our employees and the guidance of our board of directors, Atlas Air Worldwide remains innovative, adaptive and forward-looking—leading the outsourced aviation sector, driving ahead with our strategic initiatives, serving the needs of the global community and delivering value to our customers and shareholders.

¹ Non-GAAP measures that exclude certain items. See Page 43 and Page 44 of our 2019 Annual Report on Form 10-K, included with this Annual Report to Shareholders, for a reconciliation to the most directly comparable financial measures in accordance with GAAP.

In Memoriam

Our company was deeply saddened by the loss of Flight 3591 in February 2019, which claimed the lives of two of our pilots and a third pilot from another airline traveling with them. Our thoughts and prayers remain with their families, and we will continue to provide them care and support. The safety of our pilots and ground staff is our top priority, and we mourn the passing of our valued colleagues.

We also mourn the passing of the Chairman of our Board, Robert [Bob] Agnew, in August 2019. Bob was a member of the Atlas Air Worldwide board since July 2004, and was named Chairman in 2017. His extensive leadership, knowledge of the aviation industry and depth of corporate expertise made him a tremendous asset to the board and to our company.

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549**

FORM 10-K

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2019**

OR

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Commission file number 001-16545**



Atlas Air Worldwide Holdings, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)
2000 Westchester Avenue, Purchase, New York
(Address of principal executive offices)

13-4146982
(IRS Employer Identification No.)
10577
(Zip Code)

Registrant's telephone number, including area code: (914) 701-8000

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.01 Par Value	AAWW	The NASDAQ Global Select Market

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

None

Indicate by check mark if the registrant is a well known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the registrant's Common Stock held by non-affiliates based upon the closing price of Common Stock as reported on The NASDAQ Global Select Market as of June 30, 2019 was approximately \$850.7 million. As of February 17, 2020, there were 25,956,509 shares of the registrant's Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Certain portions of the registrant's Proxy Statement relating to the 2020 Annual Meeting of Stockholders, to be filed with the Securities and Exchange Commission, are incorporated by reference into Part III.

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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this “Report”), as well as other reports, releases and written and oral communications issued or made from time to time by or on behalf of Atlas Air Worldwide Holdings, Inc. (“AAWW”), contain statements that may constitute “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Those statements are based on management’s beliefs, plans, expectations and assumptions, and on information currently available to management. Generally, the words “will,” “may,” “should,” “expect,” “anticipate,” “intend,” “plan,” “continue,” “believe,” “seek,” “project,” “estimate” and similar expressions used in this Report that do not relate to historical facts are intended to identify forward-looking statements.

The forward-looking statements in this Report are not representations or guarantees of future performance and involve certain risks, uncertainties and assumptions. Such risks, uncertainties and assumptions include, but are not limited to, those described in Item 1A, “Risk Factors.” Many of such factors are beyond AAWW’s control and are difficult to predict. As a result, AAWW’s future actions, financial position, results of operations and the market price for shares of AAWW’s common stock could differ materially from those expressed in any forward-looking statements. Readers are therefore cautioned not to place undue reliance on forward-looking statements. Such forward-looking statements speak only as of the date of this report. AAWW does not intend to publicly update any forward-looking statements that may be made from time to time by, or on behalf of, AAWW, whether as a result of new information, future events or otherwise, except as required by law and expressly disclaims any obligation to revise or update publicly any forward-looking statement to reflect future events or circumstances.

PART I

ITEM 1. BUSINESS

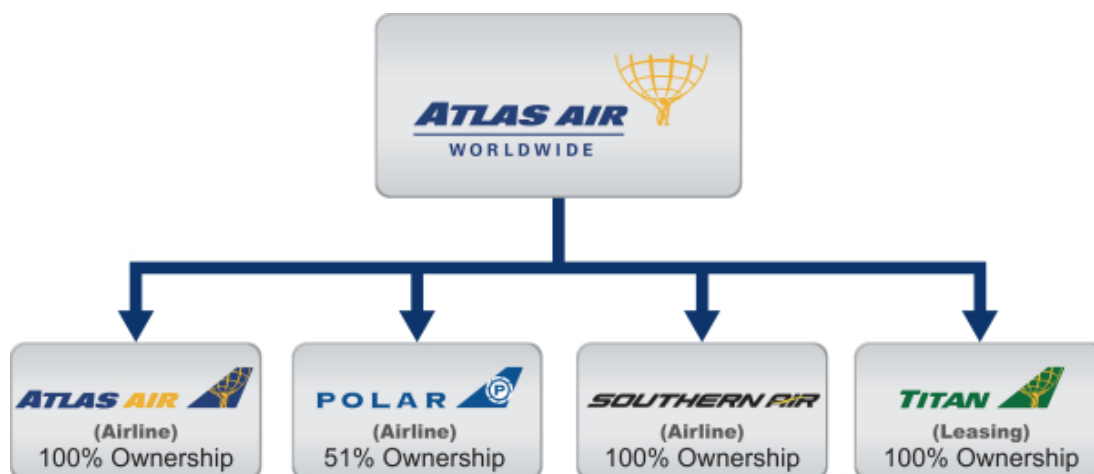
Glossary

The following represents terms and statistics specific to our business and industry. They are used by management to evaluate and measure operations, results, productivity and efficiency.

Block Hour	The time interval between when an aircraft departs the terminal until it arrives at the destination terminal.
C Check	“Heavy” airframe maintenance checks, which are more intensive in scope than Line Maintenance and are generally performed between 18 and 24 months depending on aircraft type.
D Check	“Heavy” airframe maintenance checks, which are the most extensive in scope and are generally performed every six or eight years depending on aircraft type.
Heavy Maintenance	Scheduled maintenance activities that are extensive in scope and are primarily based on time or usage intervals, which include, but are not limited to, C Checks, D Checks and engine overhauls. In addition, unscheduled engine repairs involving the removal of the engine from the aircraft are considered to be Heavy Maintenance.
Line Maintenance	Maintenance events occurring during normal day-to-day operations.
Non-heavy Maintenance	Discrete maintenance activities for the overhaul and repair of specific aircraft components, including landing gear, auxiliary power units and engine thrust reversers.
Utilization	The average number of Block Hours operated per day per aircraft.
Yield	The average amount a customer pays to fly one tonne of cargo one mile.

Overview

AAWW is a holding company with two wholly owned operating subsidiaries, Atlas Air, Inc. (“Atlas”) and Southern Air, Inc. (“Southern Air”). It also has a 51% economic interest and 75% voting interest in Polar Air Cargo Worldwide, Inc. (“Polar”). In addition, AAWW is the parent company of several wholly owned subsidiaries related to our dry leasing services (collectively referred to as “Titan”). When used in this Report, the terms “we,” “us,” “our” and the “Company” refer to AAWW and all entities in our consolidated financial statements.



We are a leading global provider of outsourced aircraft and aviation operating services. We operate the world's largest fleet of 747 freighters and provide customers a broad array of 747, 777, 767 and 737 aircraft for domestic, regional and international cargo and passenger operations. We provide unique value to our customers by giving them access to highly reliable new production freighters that deliver the lowest unit cost in the marketplace combined with outsourced aircraft operating services that we believe lead the industry in terms of quality and global scale. Our customers include express delivery providers, e-commerce retailers, airlines, freight forwarders, the U.S. military and charter brokers. We provide global services with operations in Africa, Asia, Australia, Europe, the Middle East, North America and South America.

Our primary service offerings include the following:

- ACMI, whereby we provide outsourced cargo and passenger aircraft operating solutions, including the provision of an aircraft, crew, maintenance and insurance, while customers assume fuel, demand and price risk. In addition, customers are generally responsible for landing, navigation and most other operational fees and costs;
- CMI, which is part of our ACMI business segment, whereby we provide outsourced cargo and passenger aircraft operating solutions, generally including the provision of crew, Line Maintenance and insurance, but not the aircraft. Customers assume fuel, demand and price risk, and are responsible for providing the aircraft (which they may lease from us) and generally responsible for Heavy and Non-heavy Maintenance, landing, navigation and most other operational fees and costs;
- Charter, whereby we provide cargo and passenger aircraft charter services to customers, including the U.S. Military Air Mobility Command ("AMC"), brokers, freight forwarders, direct shippers, airlines, sports teams and fans, and private charter customers. The customer generally pays a fixed charter fee that includes fuel, insurance, landing fees, navigation fees and most other operational fees and costs; and
- Dry Leasing, whereby we provide cargo and passenger aircraft and engine leasing solutions. The customer operates, and is generally responsible for insuring and maintaining, the flight equipment.

We believe that the scale, scope and quality of our outsourced services are unparalleled in our industry. The relative operating cost efficiency of our current 747-8F, 747-400F and 777-200LRF aircraft, including their superior fuel efficiency, range, capacity and loading capabilities, creates a compelling value proposition for our customers and positions us well in the markets we operate. Our fleet of 767-300 freighter aircraft, in addition to our 737 freighter aircraft, are well-suited for regional and domestic operations.

We are focused on the further enhancement of our market-leading ACMI and CMI services. We are currently the only operator offering 747-8 freighter aircraft under ACMI and CMI agreements, and we have the flexibility to expand our fleet in response to market conditions. We believe that our current fleet represents one of the most efficient, reliable freighter fleets in the market. Our primary placement for our 747-8F, 747-400F and 777-200LRF aircraft continues to be long-term outsourcing contracts with high-credit-quality customers in our ACMI segment.

During 2019, we continued to expand our relationship with Amazon.com, Inc. and its subsidiary, Amazon Fulfillment Services, Inc., (collectively "Amazon"), with the placement into CMI service of five Boeing 737-800 freighter aircraft. Amazon may, in its sole discretion, place up to 15 additional 737-800 freighter aircraft into CMI service with us by May 31, 2021.

In December 2019, we entered into an agreement with investment funds managed by Bain Capital Credit, LP (collectively "Bain Capital") to form a joint venture to develop a diversified freighter aircraft Dry Leasing portfolio with an anticipated value of approximately \$1.0 billion. This long-term joint venture aims to capitalize on demand for cargo aircraft, underpinned by robust e-commerce and express market growth. Under the joint venture, Bain Capital and Titan have committed to provide \$360.0 million and \$40.0 million of equity capital, respectively, which may be supplemented with additional commitments over time, to acquire aircraft over the next several years. Titan will also provide aircraft- and lease-management services to the venture.

Currently, our Dry Leasing business primarily includes 767-300 freighter aircraft and 777 freighters that are Dry Leased to customers on a long-term basis. Our Dry Leasing portfolio diversifies our business mix and enhances our predictable, long-term revenue and earnings streams.

AAWW was incorporated in Delaware in 2000. Our principal executive offices are located at 2000 Westchester Avenue, Purchase, New York 10577, and our telephone number is (914) 701-8000.

Operations

Introduction. Our business is organized into three operating segments based on our service offerings: ACMI, Charter and Dry Leasing. All segments are directly or indirectly engaged in the business of air transportation services but have different commercial and economic characteristics. Each operating segment is separately reviewed by our chief operating decision maker to assess operating results and make resource allocation decisions. Additional information regarding our reportable segments can be found in Note 12 to the Financial Statements.

ACMI. The core of our business is generally providing cargo aircraft outsourcing services to customers on an ACMI and CMI basis, in exchange for guaranteed minimum revenues at predetermined levels of operation for defined periods of time. ACMI and CMI contracts generally provide a predictable annual revenue and cost base by minimizing the risk of fluctuations such as price, fuel and demand risk in the air cargo business. Our revenues and most of our costs under ACMI and CMI contracts are denominated in U.S. dollars, minimizing currency risks associated with international business.

All of our ACMI and CMI contracts provide that the aircraft remain under our exclusive operating control, possession and direction at all times. These contracts further provide that both the contracts and the routes to be operated may be subject to prior and periodic approvals of the U.S. or foreign governments. The original length of these contracts generally ranges from two to seven years, although we do offer contracts of shorter or longer duration. In addition, we have also operated short-term ACMI cargo and passenger services and we expect to continue to provide such services.

Charter. Our Charter business primarily provides full planeload cargo and passenger aircraft to customers, including the AMC, brokers, freight forwarders, direct shippers, airlines, sports teams and fans, and private charter customers. Charters are for one or more flights based on a specific origin and destination. Atlas also provides limited airport-to-airport cargo services to select markets, including several cities in South America. In addition, we occasionally earn revenue on subcontracted Charter flights. Atlas typically bears all direct operating costs for both cargo and passenger charters, which include fuel, insurance, landing and navigation fees, and most other operational fees and costs.

Dry Leasing. Our Dry Leasing business provides aircraft and engines to customers, including some CMI customers, for compensation that is typically based on a fixed monthly amount (a “Dry Lease”). This business is primarily operated by Titan, which is principally a cargo aircraft dry lessor, but also owns and manages aviation assets such as engines and related equipment. In addition to providing aircraft and lease-management services to our new joint venture with Bain Capital, Titan also markets its expertise in passenger-to-freighter conversion and other aviation-related technical services.

Other Revenue. Other revenue includes administrative and management support services and flight simulator training.

DHL Investment and Polar

DHL Network Operations (USA), Inc. (“DHL”) holds a 49% equity interest and a 25% voting interest in Polar (see Note 3 to our Financial Statements). AAWW owns the remaining 51% equity interest and 75% voting interest. Under a 20-year blocked space agreement that expires in 2027 (the “BSA”), Polar provides air cargo capacity to DHL. Atlas and Polar also have a flight services agreement, whereby Atlas is compensated by Polar on a per Block Hour basis, subject to a monthly minimum Block Hour guarantee, at a predetermined rate with the opportunity for performance premiums that escalate annually. Under the flight services agreement, Atlas provides Polar with crew,

maintenance and insurance for the aircraft. Under separate agreements, Atlas and Polar supply administrative, sales and ground support services to one another. Deutsche Post AG ("DP") has guaranteed DHL's (and Polar's) obligations under the various agreements described above. AAWW has agreed to indemnify DHL for and against various obligations of Polar and its affiliates. Collectively, these agreements are referred to in this Report as the "DHL Agreements". The DHL Agreements provide us with a minimum guaranteed annual revenue stream from aircraft that have been placed in service with Polar for DHL and other customers' freight over the life of the agreements. DHL provides financial support and also assumes the risks and rewards of the operations of Polar.

Combined with Polar, we provide ACMI, CMI, Charter and Dry Leasing services to support DHL's transpacific-express, North American, intra-Asian, and global networks. In addition, we fly between the Asia Pacific region, the Middle East and Europe on behalf of DHL and other customers. Atlas also provides incremental charter capacity to Polar and DHL from time to time. See Note 3 to our Financial Statements for a further discussion of our relationship with Polar.

The following table summarizes the aircraft types and services provided to Polar and DHL as of December 31, 2019:

Aircraft	Service	Total
747-8F	ACMI	6
747-400F	ACMI	5
777-200LRF	CMI	6
777-200LRF	CMI and Dry Leasing	2
767-300	CMI and Dry Leasing	2
767-300	CMI	2
767-200	CMI	9
737-400F	CMI	5
757-200F	Dry Leasing	1
Total		38

Amazon

In May 2016, we entered into certain agreements with Amazon, which involve, among other things, CMI operation of Boeing 767-300 freighter aircraft for Amazon by Atlas, as well as Dry Leasing by Titan. The Dry Leases have a term of ten years from the commencement of each agreement, while the CMI operations are for seven years from the commencement of each agreement (with an option for Amazon to extend the term to ten years).

In March 2019, we amended the agreements entered into in 2016 with Amazon, pursuant to which we will provide CMI services using Boeing 737-800 freighter aircraft provided by Amazon. The 737-800 CMI operations will be for a term of seven years from the commencement of each agreement (with an option for Amazon to extend the term to ten years).

In conjunction with these agreements, we granted Amazon warrants providing the right to acquire shares of our common stock. See Note 7 to our Financial Statements for a discussion of these agreements with Amazon.

The following table summarizes the freighter aircraft types and services provided to Amazon as of December 31, 2019:

Aircraft	Service	Total
767-300	CMI and Dry Leasing	17
767-300	Dry Leasing	2
737-800	CMI	5
Total		24

Sales and Marketing

We have regional sales offices in various locations around the world that cover the Americas, Asia Pacific, Europe, Africa and Middle East regions. These offices market our ACMI, CMI and Dry Leasing services to express delivery providers, e-commerce retailers, airlines and freight forwarders. They also market our cargo and passenger Charter services to charter brokers, the U.S. military, freight forwarders, direct shippers and airlines.

Fuel

Historically, aircraft fuel is one of the most significant expenses for us. During 2019, 2018 and 2017, fuel costs represented 15.1%, 19.5%, and 17.4%, respectively, of our total operating expenses. Fuel prices and availability are subject to wide price fluctuations based on geopolitical issues, supply and demand, which we can neither control nor accurately predict.

Our exposure to fluctuations in fuel price is limited to the commercial portion of our Charter business only, but this risk is partially mitigated by using indexed fuel price adjustments for certain commercial charter contracts. The ACMI and Dry Leasing segments have no direct fuel price exposure because our customers are required to pay for aircraft fuel. Similarly, we generally have no fuel price risk for AMC charters because the price is set under our contract with the AMC, and we receive or make payments to adjust for price increases and decreases from the contractual rate.

In the past, we have not experienced significant difficulties with respect to fuel availability. Although we do not currently anticipate a significant reduction in the availability of aircraft fuel, a number of factors, such as geopolitical uncertainties in oil-producing nations and shortages of and disruptions to refining capacity or transportation of aircraft fuel from refining facilities, make accurate predictions unreliable. For example, hostilities and political turmoil in oil-producing nations could lead to disruptions in oil production and or to substantially increased oil prices. Any inability to obtain aircraft fuel at competitive prices would materially and adversely affect our results of operation and financial condition.

Employees

Our business depends on highly qualified management, operations and flight personnel. As a percentage of our consolidated operating expenses, salaries, wages and benefits accounted for approximately 18.7% in 2019, 22.4% in 2018 and 23.8% in 2017. As of December 31, 2019, we had 3,587 employees, 2,036 of whom were pilots. We maintain a comprehensive training program for our pilots in compliance with U.S. Federal Aviation Administration (“FAA”) requirements, in which each pilot regularly attends recurrent training programs.

Pilots of Atlas and Southern Air, and flight dispatchers of Atlas and Polar, are represented by the International Brotherhood of Teamsters (the “IBT”). These employees represented approximately 58.0% of our workforce as of December 31, 2019. We have a five-year collective bargaining agreement (“CBA”) with our Atlas pilots, which became amendable in September 2016 and a four-year CBA with the Southern Air pilots, which became amendable in November 2016. We also have a five-year CBA with our Atlas and Polar dispatchers, which was extended in April 2017 for an additional four years, making the CBA amendable in November 2021. See Note 13 to our Financial Statements for a discussion of our labor matters.

Maintenance

Maintenance represented our third-largest operating expense for the year ended December 31, 2019. Primary maintenance activities include scheduled and unscheduled work on airframes and engines. Scheduled maintenance activities encompass those activities specified in our maintenance program approved by the FAA. The costs necessary to adhere to these maintenance programs may increase over time, based on the age of the equipment or due to FAA airworthiness directives (“ADs”).

Under the ADs issued pursuant to the FAA’s Aging Aircraft Program, we are subject to extensive aircraft examinations and may be required to undertake structural modifications to our fleet from time to time to address any problems of corrosion and structural fatigue. The FAA has issued increased inspection and maintenance requirements depending on aircraft type and ADs requiring certain additional aircraft modifications. We believe all aircraft in our fleet are in compliance with all existing ADs. It is possible, however, that additional ADs applicable to the types of aircraft or engines included in our fleet could be issued in the future and that the cost of complying with such ADs could be substantial.

Under our FAA-approved maintenance programs, all Heavy Maintenance is currently performed by third-party service providers that are compensated on a time-and-material or power by the hour basis as we believe they provide the most reliable and efficient means of maintaining our aircraft fleet.

Insurance

We maintain insurance of the types and in amounts deemed adequate and consistent with current industry standards. Principal coverage includes: liability for injury to members of the public, including passengers; injury to crewmembers and ground staff; damage to our property and that of others; and loss of, or damage to, flight equipment, whether on the ground or in flight; and cyber business interruption.

Aviation insurance premiums historically have fluctuated based on factors that include the loss history of the industry in general and the insured carrier in particular. We participate in an insurance pooling arrangement with DHL and its partners. This allows us to obtain aviation hull and liability, war-risk hull and cargo loss, crew, third-party liability insurance and hull deductible coverage at reduced rates from the commercial insurance providers.

Environmental, Social and Governance

As a leading global provider of outsourced aviation operating services, we encounter and manage a broad range of environmental, social and governance (“ESG”) issues. We have established an ESG policy and identified our efforts in our ESG report, which can be viewed on our website, www.atlasairworldwide.com, under the “About Us” section.

Governmental Regulation

General. Atlas, Polar and Southern Air (the “Airlines”) are subject to regulation by the U.S. Department of Transportation (the “DOT”) and the FAA, among other U.S. and foreign government agencies. The DOT primarily regulates economic issues affecting air service, such as certification, fitness and citizenship, competitive practices, insurance and consumer protection. The DOT has the authority to investigate and institute proceedings to enforce its economic regulations and may assess civil penalties, revoke operating authority or seek criminal sanctions. The Airlines hold DOT-issued certificates of public convenience and necessity plus exemption authority to engage in scheduled air transportation of property and mail in domestic, as well as enumerated international markets, and charter air transportation of property and mail on a worldwide basis. Atlas additionally holds worldwide passenger charter authority.

The DOT conducts periodic evaluations of each air carrier’s fitness and citizenship. In the area of fitness, the DOT seeks to ensure that a carrier has the managerial competence, compliance disposition and financial resources needed to conduct the operations for which it has been certificated. Additionally, each U.S. air carrier must remain a U.S. citizen by (i) being organized under the laws of the United States or a state, territory or possession thereof; (ii) requiring its president and at least two-thirds of its directors and other managing officers to be U.S. citizens; (iii) allowing no more than 25% of its voting stock to be owned or controlled, directly or indirectly, by foreign nationals; and (iv) not being otherwise subject to foreign control. The DOT broadly interprets “control” to exist when an individual or entity has the potential to exert substantial influence over airline decisions through affirmative action or the threatened withholding of consents and or approvals. We believe the DOT will continue to find the Airlines’ fitness and citizenship favorable.

In addition, the Airlines are required to hold valid FAA-issued air carrier certificates and FAA-approved operations specifications authorizing operation in specific regions with specified equipment under specific conditions and are subject to extensive FAA regulation and oversight. The FAA is the U.S. government agency primarily responsible for regulation of flight operations and, in particular, matters affecting air safety, such as airworthiness requirements for aircraft, operating procedures, mandatory equipment and the licensing of pilots, mechanics and dispatchers. The FAA monitors compliance with maintenance, flight operations and safety regulations and performs frequent spot inspections of aircraft, employees and records. The FAA also has the authority to issue ADs and maintenance directives and other mandatory orders relating to, among other things, inspection of aircraft and engines, fire retardant and smoke detection devices, increased security precautions, collision and windshear avoidance systems, noise abatement and the mandatory removal and replacement of aircraft parts that have failed or may fail in the future. In addition, the FAA mandates certain record-keeping procedures. The FAA has the authority to modify, temporarily suspend or permanently revoke an air carrier's authority to provide air transportation or that of its licensed personnel, after providing notice and a hearing, for failure to comply with FAA rules, regulations and directives. The FAA is empowered to assess civil penalties for such failures or institute proceedings for the imposition and collection of monetary fines for the violation of certain FAA regulations and directives. The FAA is also empowered to modify, suspend or revoke an air carrier's authority on an emergency basis, without providing notice and a hearing, where significant safety issues are involved.

International. Air transportation in international markets (the vast majority of markets in which the Airlines operate) is subject to extensive additional regulation. The ability of the Airlines to operate in other countries is governed by aviation agreements between the United States and the respective countries (in the case of Europe, the European Union (the "EU")) or, in the absence of such an agreement, by principles of reciprocity. Sometimes, aviation agreements restrict the number of airlines that may operate, their frequency of operation, or the routes over which they may fly. This makes it necessary for the DOT to award route and operating rights to U.S. air carrier applicants through competitive route proceedings. International aviation agreements are periodically subject to renegotiation, and changes in U.S. or foreign governments could result in the alteration or termination of such agreements, diminish the value of existing route authorities or otherwise affect the Airlines' international operations. Foreign government authorities also impose substantial licensing and business registration requirements and, in some cases, require the advance filing and or approval of schedules or rates. Moreover, the DOT and foreign government agencies typically regulate alliances and other commercial arrangements between U.S. and foreign air carriers, such as the ACMI and CMI arrangements that Atlas maintains. Approval of these arrangements is not guaranteed and may be conditional. In addition, approval during one time period does not guarantee approval in future periods.

A foreign government's regulation of its own air carriers can also affect our business. For instance, the EU places limits on the ability of EU carriers to use ACMI aircraft operated by airlines of non-EU member states. The regulations have a negative impact on our ACMI business opportunities.

Brexit. Following parliamentary elections in December 2019, the United Kingdom ("U.K.") left the EU on January 31, 2020. Trade agreements between the UK and the EU are under consideration. As U.S. airlines, the Airlines will remain covered by the U.S.-EU air services agreement, which broadly accords traffic rights between the U.S. and the EU, via intermediate points and beyond. In December 2018, the U.S. and U.K. governments reached agreement on the terms of an open skies agreement governing U.S. and U.K. airlines after the U.S.-EU agreement ceases to apply to the U.K. Nevertheless, practical difficulties could arise with respect to operations in the post-Brexit environment. These issues are not expected to have a material adverse effect on our operations.

Airport Access. The ability of the Airlines to operate suitable schedules is dependent on their ability to gain access to airports of their choice at commercially desirable times and on acceptable terms. In some cases, this is constrained by the need for the assignment of takeoff and landing "slots" or comparable operational rights. Like other air carriers, the Airlines are subject to such constraints at slot-restricted airports in cities such as Chicago and a variety of foreign locations (e.g., Amsterdam, Incheon, Hong Kong, Shanghai and Tokyo). The availability of slots is not assured and the inability of the Airlines or their ACMI carrier customers to obtain additional slots could inhibit efforts to provide expanded services in certain international markets. In addition, nighttime flight restrictions have been imposed or proposed by Hong Kong and various airports in Europe, Canada and the U.S. These could have an adverse operational and or economic impact.

Access to the New York airspace presents an additional challenge. Because of congestion in the New York area, especially at John F. Kennedy International Airport (“JFK”), the FAA imposes hourly limits on JFK operations of those carriers offering scheduled services and potentially could place limits on Charter flights.

As a further means to address congestion, the FAA allows U.S. airports to raise landing fees to defray the costs of airfield facilities under construction or reconstruction. Any landing fee increases implemented would have an impact on airlines generally.

Security. The U.S. Transportation Security Administration (“TSA”) and international regulatory bodies extensively regulate aviation security through rules, regulations and security directives that are designed to prevent unauthorized access to passenger and freighter aircraft and the introduction of prohibited items including firearms and explosives onto an aircraft. Atlas and Polar currently operate pursuant to a TSA-approved risk-based security program that, we believe, adequately maintains the security of all aircraft in the fleet. We utilize the TSA, the intelligence community and the private sector as resources for our aggressive threat-based risk-management program. There can be no assurance, however, that we will remain in compliance with existing or any additional security requirements imposed by TSA or by U.S. Congress without incurring substantial costs, which may have a material adverse effect on our operations. To mitigate any such increase, we are working closely with the Department of Homeland Security and other government agencies to ensure that a risk-based management approach is utilized to target specific “at-risk” cargo. Additionally, foreign governments and regulatory bodies (such as the European Commission) impose their own aviation security requirements and have increasingly tightened such requirements. This may have an adverse impact on our operations, especially to the extent the new requirements may necessitate redundant or costly measures or be in conflict with TSA requirements. We have successfully implemented all European Commission security programs allowing us unimpeded access to European markets.

Environmental. We are subject to various federal, state and local laws relating to the protection of the environment and health and safety matters, including the discharge of pollution, the disposal of materials and chemical wastes, the cleanup of contamination and the regulation of aircraft noise, which are administered by numerous state, local, federal and foreign agencies. For instance, the DOT and the FAA have authority under the Aviation Safety and Noise Abatement Act of 1979 and under the Airport Noise and Capacity Act of 1990 to monitor and regulate aircraft engine noise. We believe that all aircraft in our fleet materially comply with current DOT, FAA and international noise standards.

We are also subject to the regulations in the U.S., by the U.S. Environmental Protection Agency (the “EPA”), and the international jurisdictions in which we operate regarding air quality. We believe that all of our aircraft meet or exceed applicable fuel venting requirements and other air emissions standards.

Various jurisdictions, including the EU, U.S. and other international governments and bodies, have implemented or are considering measures to respond to climate change and greenhouse gas emissions.

For instance, in October 2013, the International Civil Aviation Organization (“ICAO”) reached a nonbinding agreement to address climate change by developing global market-based measures to assist in achieving carbon-neutral growth. In October 2016, ICAO approved a resolution to adopt a global market-based measure known as the Carbon Offsetting and Reduction Scheme for International Aviation (“CORSIA”), which is designed to offset any annual increases in total carbon emissions from international civil aviation above a baseline level determined by the average of 2019 and 2020 emissions. Although various details regarding the implementation of CORSIA still need to be finalized, a pilot phase will run from 2021 to 2023. Starting in 2019, the Airlines have voluntarily begun tracking and have begun reporting emissions in accordance with CORSIA methodology in 2020, even though it is not yet mandatory in ICAO member countries. As a result, starting in 2024, the Airlines may need to purchase allowances to offset their assigned share of emissions overages based on the reporting for the 2021 to 2023 compliance period. For subsequent compliance periods, a similar procedure will apply.

The EU continues to address climate change through its Emissions Trading Scheme (“ETS”). Following the end of every year, to the extent the ETS applies, each airline must tender the number of carbon emissions allowances (“Allowances”) corresponding to carbon emissions generated by its covered flight activity during the year. If the airline’s flight activity during the year has produced carbon emissions exceeding the number of Allowances that it has been awarded, the airline must acquire Allowances from other airlines in the open market. In recognition of

ICAO's adoption of CORSIA, the ETS has been suspended with respect to flights to and from non-European countries continues through December 31, 2023. However, the ETS remains applicable to intra-European flights. Additionally, various European constituencies have begun to advocate for supplemental controls on aviation greenhouse gas emissions through additional taxation and similar measures.

In the United States, various constituencies have continued to advocate for controls on greenhouse gas emissions. On August 15, 2016, the EPA issued a final rule finding that greenhouse gas emissions from aircraft cause or contribute to air pollution that may reasonably be anticipated to endanger public health and welfare. It is possible that these or other developments could lead to the future regulation of greenhouse gas emissions from aircraft in the U.S.

Other Regulations. Air carriers are also subject to certain provisions of the Communications Act of 1934 because of their extensive use of radio and other communication facilities and are required to obtain an aeronautical radio license from the Federal Communications Commission. Additionally, we are subject to U.S. and foreign antitrust requirements and international trade restrictions imposed by U.S. presidential determination and U.S. government agency regulation, including the Office of Foreign Assets Control of the U.S. Department of the Treasury. We endeavor to comply with such requirements at all times. We are also subject to state and local laws and regulations at locations where we operate and at airports that we serve. Our operations may become subject to additional international, U.S. federal, state and local requirements in the future.

We believe that we are in material compliance with all currently applicable laws and regulations.

Civil Reserve Air Fleet. As part of our Charter business, Atlas and Polar both participate in the U.S. Civil Reserve Air Fleet ("CRAF") Program, which permits the U.S. Department of Defense to utilize participants' aircraft during national emergencies when the need for military airlift exceeds the capability of military aircraft. Participation in the CRAF Program could adversely restrict our commercial business in times of national emergency. Under the CRAF Program, contracts with the AMC are for two-years with an option for the AMC to extend the contract for two additional two-year periods. We have made a substantial number of our aircraft available for use by the U.S. military in support of their operations and we operate such flights pursuant to cost-based contracts. Atlas bears all direct operating costs for both passenger and cargo aircraft, which include fuel, insurance, overfly, landing and ground handling expenses. The contracted charter rates (per mile) and fuel prices (per gallon) are fixed by the AMC periodically. We receive reimbursements from the AMC each month if the price of fuel paid by us to vendors for the AMC Charter flights exceeds the fixed price. If the price of fuel paid by us is less than the fixed price, then we pay the difference to the AMC.

Airlines may participate in the CRAF Program either alone or through a teaming arrangement. We are a member of the team led by FedEx Corporation ("FedEx"). We pay a commission to the FedEx team, based on the revenues we receive under our AMC contracts. The AMC buys cargo capacity on two bases: a fixed basis, which is awarded both annually and quarterly, and expansion flying, which is awarded on an as-needed basis throughout the contract term. While the fixed business is predictable, Block Hour levels for expansion flying are difficult to predict and thus are subject to fluctuation.

Future Regulation. The U.S. Congress, the DOT, the FAA, the TSA and other government agencies are currently considering, and in the future may consider, adopting new laws, regulations and policies regarding a wide variety of matters that could affect, directly or indirectly, our operations, ownership and profitability. It is impossible to predict what other matters might be considered in the future and to judge what impact, if any, the implementation of any future proposals or changes might have on our businesses.

Competition

The market for ACMI and CMI services is competitive. We believe that the most important basis for competition in this market is the efficiency and cost-effectiveness of the aircraft assets and the scale, scope and quality of the outsourced operating services provided. Atlas is the market-leading provider of ACMI and CMI services with the modern 747-8 and 777 freighter aircraft. Our primary competitors providing ACMI and CMI services for 777, 747-400 and 767 freighter aircraft include the following: Air Atlanta Icelandic; Air Transport Services Group, Inc.; Kalitta Air; and Western Global Airlines.

The Charter market is competitive, with a number of cargo operators that include AirBridge Cargo Airlines; Cargolux; Kalitta Air; National Air Cargo; and passenger airlines providing similar services utilizing 747-8Fs and 747-400s. We believe that we offer a superior long-haul aircraft in the 747-8F and 747-400, and we will continue to develop new opportunities in the Charter market for aircraft not otherwise deployed in our ACMI business.

The Dry Leasing business is also competitive with a large number of companies offering operating lease solutions globally. We believe that we have an advantage over other aircraft lessors in the freighter aircraft Dry Leasing space as a result of our extensive relationships in the air freight market, and our insights and expertise as an operator of aircraft. Titan also competes in the passenger aircraft leasing market to develop key customer relationships, enter strategic geographic markets, and or acquire feedstock aircraft for future freighter conversion. Our primary competitors in the aircraft leasing market include GE Capital Aviation Services, Altavair Air Finance, Air Transport Services Group, Inc., BBAM Aircraft and Leasing Management and Vx Capital Partners.

Available Information

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and all amendments to those reports, filed with or furnished to the Securities and Exchange Commission (the "SEC"), are available free of charge through our corporate internet website, www.atlasairworldwide.com, as soon as reasonably practicable after we have electronically filed such material with, or furnished it to, the SEC. In addition, the SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at www.sec.gov.

The information on our website is not, and shall not be deemed to be, part of this Report or incorporated into any other filings we make with the SEC.

ITEM 1A. RISK FACTORS

You should carefully consider each of the following Risk Factors and all other information in this Report. These Risk Factors are not the only ones facing us. Our operations could also be impaired by additional risks and uncertainties. If any of the following risks and uncertainties develops into actual events, our business, financial condition and results of operations could be materially and adversely affected.

RISKS RELATED TO OUR BUSINESS

Risks Related to Our Business Generally

Deterioration in the airfreight market, global economic conditions, financial markets or global supply chains could adversely affect our business, results of operations, financial condition, liquidity and ability to access capital markets.

Airfreight demand has historically been highly dependent on global economic conditions, which could be negatively impacted by changes in U.S. and foreign government trade policies, changes in economies throughout the world and limited access to certain markets, among other things. The impact of the global airfreight environment and macroeconomic conditions, including tariffs, global trade tensions and geopolitical unrest in certain countries in South America, especially during the fourth quarter of 2019, resulted in lower 747-400 commercial cargo Yields and aircraft Utilization. If demand for our services, Yields or lease rates deteriorate, it could have a material adverse effect on our business, results of operations and financial condition.

We also could be negatively impacted by supply chain disruption caused by geopolitical events or health epidemics. In December 2019, a novel strain of coronavirus was reported in China and has since been reported in other countries. This outbreak has disrupted the global supply chains involving China and Asia, resulting in certain cancellations of cargo flights. Cancellations of passenger flights by other airlines to and from that region have also impacted our ability to position crewmembers for operating our aircraft. Although we expect the disruption from the virus to be temporary, given the dynamic nature of these circumstances, the duration of business disruption, the extent of customer cancellations and the related financial impact cannot be reasonably estimated at this time but could materially affect our business, results of operations and financial condition.

In addition, we may face significant challenges if conditions in the financial markets deteriorate. Our business is capital intensive and growth depends on the availability of capital for new aircraft, among other things. If capital availability deteriorates, we may be unable to raise the capital necessary to finance business growth or other initiatives or to repay our debt when it matures. Our ability to access the capital markets may be restricted at a time when we would like, or need, to do so, which could have an impact on our flexibility to react to changing economic and business conditions.

We could be adversely affected if any of our existing aircraft are underutilized, if we fail to deploy or redeploy aircraft with customers at favorable rates, or if any of our aircraft are impaired. We could also be adversely affected from the loss of one or more of our aircraft for an extended period of time.

Our operating revenues depend on our ability to effectively deploy the aircraft in our fleet and maintain high utilization of our aircraft at favorable rates. If we have underutilized aircraft, we would seek to redeploy those aircraft in our other lines of business or sell them. If we are unable to successfully redeploy our existing aircraft at favorable rates or sell them on favorable terms, it could have a material adverse effect on our business, results of operations and financial condition. In addition, if one or more of our aircraft is out of service for an extended period of time, our operating revenues would decrease and we may have difficulty fulfilling our obligations under one or more of our existing contracts. The loss of revenue resulting from any such business interruption, and the cost and potentially long lead time and difficulties in sourcing a replacement aircraft, could have a material adverse effect on our business, results of operations and financial condition.

We record impairment charges on long-lived assets when events and circumstances indicate that the assets may be impaired, the undiscounted cash flows estimated to be generated by those assets are less than their carrying amount and the net book value of the assets exceeds their estimated fair value. The airfreight market and Yields can

be volatile and negatively affected by excess capacity due to factors such as global economic conditions and reduced customer demand. Asset impairments or other charges related to capacity could have a material adverse effect on our business, results of operations and financial condition.

Global trade flows are typically seasonal, and our business, including our ACMI customers' business, experiences seasonal variations.

Global trade flows are typically seasonal in nature, with peak activity occurring during the retail holiday season, which generally begins in September/October and lasts through most of December. Our ACMI and CMI contracts generally have contractual utilization minimums that typically allow our customers to cancel an agreed-upon percentage of the guaranteed hours of aircraft utilization over the course of a year. Our ACMI and CMI customers often exercise those cancellation options early in the first quarter of the year, when the demand for air cargo capacity is historically low following the seasonal holiday peak in the fourth quarter of the previous year. While our revenues typically fluctuate seasonally as described above, a significant proportion of the costs associated with our business, such as debt service, aircraft rent, depreciation and facilities costs, are fixed and cannot easily be reduced to match the seasonal drop in demand. In addition, we typically incur a higher proportion of Heavy Maintenance during the first half of the year. As a result, our net operating results are typically lower in the first quarter and increase as the year progresses.

Insurance coverage may become more expensive and difficult to obtain and may not be adequate to insure all of our risks. In addition, if our Dry Lease customers have inadequate insurance coverage or fail to fulfill their indemnification obligations, it could have a material adverse effect on our business, results of operations and financial condition.

Aviation insurance premiums historically have fluctuated based on factors that include the loss history of the industry in general, and the insured carrier in particular. Adverse events involving aircraft could result in increased insurance costs and could affect the price and availability of such coverage.

We participate in an insurance pooling arrangement with DHL and its partners. This allows us to obtain aviation hull and liability, war-risk hull and cargo loss, crew, third-party liability and hull deductible coverage at reduced rates from the commercial insurance providers. If we are no longer included in this arrangement for any reason or if pool members have coverage incidents, we may incur higher insurance costs. There can be no assurance that we will be able to maintain our existing coverage on terms favorable to us or that the premiums for such coverage will not increase substantially, which could have a material adverse effect on our business, results of operations and financial condition.

Some of our aircraft are deployed in potentially dangerous locations and carry hazardous cargo incidental to the services we provide in support of our customers' activities. In addition, some areas through which our flight routes pass are subject to geopolitical instability, which increases the risk of death or injury to our passengers, employees or contractors, business interruption or a loss of, or damage to, our aircraft and or its cargo. While we carry insurance against the risks inherent to our operations, which we believe are consistent with the insurance arrangements of other participants in our industry, we cannot provide assurance that we are adequately insured against all risks, including coverage for weapons of mass destruction. We do not have insurance against the loss arising from business interruption. Any injury to passengers, employees or contractors or loss/damage of aircraft/cargo incidents resulting in claims in excess of related insurance coverage could have a material adverse effect on our business, results of operations and financial condition.

Lessees are required under our Dry Leases to indemnify us for, and insure against, liabilities arising out of the use and operation of the aircraft, including third-party claims for death or injury to persons and damage to property for which we may be deemed liable. Lessees are also required to maintain public liability, property damage and all-risk hull and war-risk hull insurance on the aircraft at agreed-upon levels. If our lessees' insurance is not sufficient to cover all types of claims that may be asserted against us or if our lessees fail to fulfill their indemnification obligations, we would be required to pay any amounts in excess of our insurance coverage, which could have a material adverse effect on our business, results of operations and financial condition.

We are party to collective bargaining agreements covering pilots of Atlas and Southern Air and a collective bargaining agreement covering our Atlas and Polar flight dispatchers. This could result in higher labor costs and or result in a work interruption or stoppage.

Pilots of Atlas (who operate Atlas and Polar flights) and Southern Air and flight dispatchers of Atlas and Polar are represented by the IBT. We have a five-year CBA with our Atlas pilots, which became amendable in September 2016 and a four-year CBA with our Southern Air pilots, which became amendable in November 2016. Initial negotiations commenced in January of 2016, nine months prior to the amendable date. Negotiations have continued as governed by a July 6, 2017 framework agreement, which was established to accommodate a joint CBA, and the parties have continued to meet regularly since then. We also have a five-year CBA with our Atlas and Polar dispatchers, which was extended in April 2017 for an additional four years, making the CBA amendable in November 2021. We are subject to risks of increased labor costs associated with having a partially unionized workforce, as well as a greater risk of work interruption or stoppage, which could negatively impact our business, including a reduction in our revenue and an increase in our operating costs. We cannot provide assurance that disputes, including disputes with certified collective bargaining representatives of our employees, will not arise in the future or will result in an agreement on terms satisfactory to us. In addition, the costs associated with resolving such disputes could have a material adverse effect on our business, results of operations and financial condition.

As a U.S. government contractor, we are subject to a number of procurement and other rules and regulations that affect our business. A violation of these rules and regulations could lead to termination or suspension of our government contracts and could prevent us from entering into contracts with government agencies in the future.

To do business with government agencies, including the AMC, we must comply with, and are affected by, many rules and regulations, including those related to the formation, administration and performance of U.S. government contracts. These rules and regulations, among other things:

- require, in some cases, procurement from small businesses;
- require disclosure of all cost and pricing data in connection with contract negotiations;
- give rise to U.S. government audit rights;
- impose accounting rules that dictate how we define certain accounts, define allowable costs and otherwise govern our right to reimbursement under certain cost-based U.S. government contracts;
- establish specific health, safety and doing-business standards; and
- restrict the use and dissemination of information classified for national security purposes and the exportation of certain products and technical data.

These rules and regulations affect how we do business with our customers and, in some instances, add costs to our business. A violation of these rules and regulations could result in the imposition of fines and penalties or the termination of our contracts. In addition, the violation of certain other generally applicable rules and regulations could result in our suspension or debarment as a government contractor.

Our financial condition may suffer if we experience unanticipated costs as a result of ongoing lawsuits and claims related to alleged pricing practices or other legal and regulatory matters.

In the Netherlands, Stichting Cartel Compensation, successor in interest to claims of various shippers, has filed suit in the district court in Amsterdam against British Airways, KLM, Martinair, Air France, Lufthansa and Singapore Airlines (“Defendants”) seeking recovery for damages purportedly arising from allegedly unlawful pricing practices of such Defendants. In response, Defendants filed third-party indemnification lawsuits against Polar Air Cargo, LLC (“Old Polar”), a consolidated subsidiary of the Company, and Polar, seeking indemnification in the event the Defendants are found to be liable in the main proceedings. Another defendant, Thai Airways, filed a similar indemnification claim. Activities in the case have focused on various procedural issues, some of which are awaiting court determination. The Netherlands proceedings are likely to be affected by a decision readopted by the

European Commission in March 2017, finding EU competition law violations by Defendants, among others, but not Old Polar or Polar.

If Old Polar, Polar or the Company were to incur an unfavorable outcome in the litigation described above or in similar litigation, it could have a material adverse effect on our business, results of operations and financial condition.

In addition to the litigation described above, we are subject to a number of Brazilian customs claims, as well as other claims, lawsuits and pending actions which we consider to be routine and incidental to our business (see Note 13 to our Financial Statements). If we were to receive an adverse ruling or decision on any such claims, it could have an adverse effect on our business, results of operations and financial condition.

Fuel availability and price volatility could adversely affect our business and operations.

The price of aircraft fuel is unpredictable and can be volatile. Our exposure to fluctuations in fuel price is limited to the commercial portion of our Charter business only, and while this risk is partially mitigated by using indexed fuel price adjustments for certain commercial charter contracts, it has not been completely eliminated. Our ACMI and CMI contracts require our customers to pay for aircraft fuel. Regardless, if fuel costs increase significantly, our customers may reduce the volume and frequency of cargo shipments or find less costly alternatives for cargo delivery, such as land and sea carriers. Such actions could have a material adverse effect on our business, results of operations and financial condition.

In the past, we have not experienced significant difficulties with respect to fuel availability. Although we do not currently anticipate a significant reduction in the availability of aircraft fuel, a number of factors, such as geopolitical uncertainties in oil-producing nations and shortages of and disruptions to refining capacity, make accurate predictions unreliable. Any inability to obtain aircraft fuel at competitive prices could have a material adverse effect on our business, results of operations and financial condition.

We rely on third parties to provide certain essential services. If these service providers do not deliver the high level of service and support required in our business at commercially reasonable terms, it could have a material adverse effect on our business, results of operations and financial condition.

We rely on third parties to provide certain essential services on our behalf, including maintenance, ground handling and flight attendants. In certain locations, there may be very few sources, or sometimes only a single source, of supply for these services. If we are unable to effectively manage these third parties, they may provide inadequate levels of support or charge commercially unreasonable amounts for their services, which could harm our customer relationships and ability to remain competitive. Any material problems with the quality, timeliness and cost of our contracted services, or an unexpected termination of those services, could have a material adverse effect on our business, results of operations and financial condition.

We could be adversely affected by a significant data breach or disruption of our information technology systems.

We are heavily and increasingly dependent on technology to operate our business. Our information technology systems or those of third parties on which we rely, as well as our business more broadly, could be disrupted due to various events, some of which are beyond our control, including natural disasters, power failures, terrorist attacks, equipment failures, software failures, computer viruses, security breaches and cyber attacks. In addition, there are numerous and evolving risks to cybersecurity and privacy, including criminal hackers, hacktivists, state-sponsored intrusions, industrial espionage, employee malfeasance and human or technological error. A significant disruption could result in a range of potentially material negative consequences for us, including unauthorized access to, disclosure, modification, misuse, loss or destruction of company systems or data; theft of sensitive, regulated or confidential data, intellectual property; the loss of functionality of critical systems through ransomware, denial of service or other attacks; and business delays, service or system disruptions, damage to equipment and injury to persons or property.

We have taken numerous steps to implement business resiliency and cybersecurity, as well as, obtained cyber business interruption insurance to help reduce the risk and impact of some of the potential disruptions discussed above. There can be no assurance, however, that the measures we have taken are adequate to prevent or remedy disruptions or failures of our systems.

A cybersecurity incident could also impact our brand, harm our reputation and adversely impact our relationships with our customers, employees and stockholders. In addition, a failure of certain of our vital systems could limit our ability to operate our flights for an extended period of time. Failure to appropriately address these issues could have a material adverse effect on our business, results of operations and financial condition.

Our ability to utilize net operating loss carryforwards for U.S. income tax purposes may be limited. In addition, we operate in multiple jurisdictions and may become subject to a wide range of income and other taxes.

As of December 31, 2019, we had \$2.2 billion of federal net operating loss carryforwards (“NOLs”) for U.S. income tax purposes, net of unrecognized tax benefits and valuation allowance, most of which will expire through 2037, if not utilized. Section 382 of the Internal Revenue Code (“Section 382”) imposes an annual limitation on the amount of a corporation’s U.S. federal taxable income that can be offset by NOLs if it experiences an “ownership change,” as defined by Section 382. We experienced ownership changes, as defined by Section 382, in 2004 and 2009. In addition, the acquisition of Southern Air in 2016 constituted an ownership change for that entity. Accordingly, the use of our NOLs generated prior to these ownership changes is subject to an annual limitation. If certain changes in our ownership occur prospectively, there could be an additional annual limitation on the amount of utilizable NOLs, which could have a material adverse effect on our business, results of operations and financial condition.

We operate in multiple jurisdictions and may become subject to a wide range of income and other taxes. If our operations become subject to significant income and other taxes, this could have a material adverse effect on our business, results of operations and financial condition. In addition, certain of our companies participate in an aircraft leasing incentive program in Singapore and qualify for a related concessionary income tax rate. If these companies do not remain in the program or the related concessionary rate increases in the future, we could be subject to additional Singapore income tax, which could have a material adverse effect on our business, results of operations and financial condition.

Risks Related to Our ACMI Business

We depend on a limited number of significant customers for our ACMI business and the loss of one or more of such customers could materially adversely affect our business, results of operations and financial condition.

Our ACMI business depends on a limited number of customers. We typically enter into long-term ACMI and CMI contracts with our customers. The terms of our existing contracts are generally scheduled to expire on a staggered basis. There is a risk that any one of our significant ACMI or CMI customers may not renew their contracts with us on favorable terms or at all, perhaps due to reasons beyond our control. For example, certain of our airline ACMI customers may not renew their ACMI contracts with us because they decide to exit the dedicated cargo business or as they take delivery of new aircraft in their own fleet. Select customers have the opportunity to terminate their long-term agreements in advance of the expiration date, following notice to allow for remarketing of the aircraft.

Entering into ACMI and CMI contracts with new customers sometimes requires a long sales cycle, and as a result, if our contracts are not renewed, and there is a resulting delay in entering into new contracts, it could have a material adverse effect on our business, results of operations and financial condition.

Our agreements with several ACMI and CMI customers require us to meet certain performance targets, including certain departure/arrival reliability standards. Failure to meet these performance targets could adversely affect our business and financial results.

Our ability to derive the expected economic benefits from our transactions with certain ACMI and CMI customers depends substantially on our ability to successfully meet strict performance standards and deadlines for aircraft and ground operations. If we do not meet these requirements, we may not be able to achieve the projected revenues and profitability from these contracts, and we could be exposed to certain remedies, including termination of the agreements with Amazon and the BSA with DHL in the most extreme of circumstances, as described below.

Risks Related to the Agreements with Amazon

Our agreements with Amazon confer certain termination rights which, if exercised or triggered, may result in our inability to realize the full benefits of the agreements.

The agreements give Amazon the option to terminate in certain circumstances and upon the occurrence of certain events of default, including a change of control or our failure to meet certain performance requirements. In particular, Amazon will have the right to terminate without cause the agreement providing for CMI operations upon providing us at least 180 days' prior written notice of termination.

Upon termination, Amazon will generally, subject to certain exceptions, retain the warrants that have vested prior to the time of termination and, depending on the circumstances giving rise to the termination, may have the right to accelerated vesting of the remaining warrants upon a change of control of our company. Upon termination, Amazon or we may also have the right to receive a termination fee from the other party depending on the circumstances giving rise to the right of termination.

If Amazon exercises any of these termination rights, it could have a material adverse effect on our business, results of operations and financial condition.

Our future earnings and earnings per share, as reported under generally accepted accounting principles, could be adversely impacted by the warrants granted to Amazon.

The warrants granted to Amazon increase the number of diluted shares reported, which has a negative effect on our fully diluted earnings per share. Further, some of the warrants are presented as liabilities in our consolidated balance sheets and are subject to fair value measurement adjustments during the periods that they are outstanding. Accordingly, future fluctuations in the fair value of the warrants could have a material adverse effect on our results of operations.

If Amazon exercises its right to acquire shares of our common stock pursuant to the warrants, it will dilute the ownership interests of our then-existing stockholders and could adversely affect the market price of our common stock.

If Amazon exercises its right to acquire shares of our common stock pursuant to the warrants, it will dilute the ownership interests of our then-existing stockholders and reduce our earnings per share. In addition, any sales in the public market of any common stock issuable upon the exercise of the warrants by Amazon could adversely affect prevailing market prices of our common stock.

If Amazon exercises its right to acquire shares of our common stock pursuant to the warrants, Amazon may become a significant stockholder and may be entitled to appoint a director to our board of directors.

The warrants issued by us to Amazon grant Amazon the right to purchase up to 39.9%, in the aggregate, of our common stock on a post-issuance basis. If the warrants granted to Amazon are exercised, Amazon may become a significant stockholder of our company. We have entered into a stockholders agreement with Amazon, pursuant to which Amazon's ability to vote in its discretion will generally be capped at 14.9% with the remainder to be voted in accordance with our board of directors' recommendation. In addition, under the stockholders agreement, Amazon

will be entitled to appoint one director to our board of directors when Amazon owns 10% or more of our common stock. Until such time, Amazon is entitled to designate a non-voting observer to our board of directors.

Risk Related to the BSA with DHL

Our agreements with DHL confer certain termination rights to them which, if exercised or triggered, may result in our inability to realize the full benefits of the BSA with DHL.

The BSA gives DHL the option to terminate the agreements for convenience by giving us a one-year notice on or before October 27, 2022, which would be effective on October 23, 2023. Further, DHL has a right to terminate the BSA for cause following a specified management resolution process if we default on our performance or we are unable to perform for reasons beyond our control. If DHL exercises any of these termination rights, it could have a material adverse effect on our business, results of operations and financial condition.

Risks Related to Our Charter Business

We derive a significant portion of our revenues from the AMC, and a substantial portion of these revenues have been generated pursuant to expansion flying, as opposed to fixed contract arrangements with the AMC. Revenues from the AMC are volatile and may decline from current levels.

As a percentage of our total operating revenue, revenue derived from the AMC was approximately 24.6% in 2019, 23.7% in 2018 and 23.0% in 2017. Historically, the revenues derived from expansion (or ad-hoc) flights for the AMC significantly exceeded the value of the fixed flight component of our AMC contract.

Revenues from the AMC are derived from two-year contracts with an option for the AMC to extend the contract for two additional two-year periods. Changes in national and international political priorities can significantly affect the volume of business from the AMC. Any decrease in U.S. military activity could reduce revenue from the AMC. In addition, our share of the total business from the AMC depends on several factors, including the total fleet size we commit to the CRAF program and the total number of aircraft deployed by our teaming arrangement partners and competitors in the program.

The AMC also holds all carriers to certain on-time performance requirements as a percentage of flights flown and, as a result of AMC demand volatility, it has become more difficult to comply with those requirements. To the extent that we fail to meet those performance requirements or if we fail to pass biennial AMC audits, revenues from our business with the AMC could decline through a suspension or termination of our AMC contract. Our revenues could also decline due to a reduction in the revenue rate we are paid by the AMC, a greater reliance by the AMC on its own fleet or a reduction in our allocation of AMC flying. Any reduction in our AMC flying could also negatively impact our Charter revenue from commercial customers for trips related to one-way AMC missions. We expect revenues and profitability from our business with the AMC to continue to remain volatile as the U.S. military continues to move troops and cargo to and from areas of conflict around the world. If we are unable to effectively deploy any resultant capacity during periods of reduced flying, it could have a material adverse effect on our business, results of operations and financial condition.

Our business with the AMC is sensitive to teaming arrangements which affect our relative share of AMC flying and the associated revenue. If one of our team members reduces its commitments or withdraws from the program, or if other carriers on other teams commit additional aircraft, our share of AMC flying may decline. In addition, any changes made to the commissions that we pay or receive for AMC flying or changes to the contracting mechanism could impact the revenues or profitability of this business.

Each year, the AMC allocates its air capacity requirements to different teams of participating airlines based on a mobilization value point system that is determined by the amount and types of aircraft that each team of airlines pledges to the program. We participate in the program through a teaming arrangement with other airlines, led by FedEx. Our team is one of two major teams participating in the program during our current contract year. Several factors could adversely affect the amount of AMC flying that is allocated to us, including:

- changes in the contracting mechanism;
- the formation of new competing teaming arrangements;
- the withdrawal of any of our team's current partners, especially FedEx;
- a reduction of the number of aircraft pledged by us or other members of our team; or
- increased participation of other carriers on other teams.

Any changes that would result in a reduction in our share of, or profitability from, AMC flying could have a material adverse effect on our business, results of operations and financial condition.

Risk Related to Our Dry Leasing Business

Any default by our Dry Lease customers, including (but not limited to) failure to make timely payments, failure to maintain insurance or failure to properly maintain our aircraft, could adversely affect our financial results.

Our Dry Leasing business depends on the ability of our customers to satisfy their obligations under our leases, which may be affected by factors outside our control, including but not limited to: supply and demand of aircraft; competition; economic conditions; the price and availability of aircraft fuel; government regulations; the availability and cost of financing; failure to maintain insurance; and their overall financial condition and cash flow. Any default by our customers can result in reduced cash flow, termination of the lease and repossession of the related aircraft, any of which could have a material adverse effect on our business, results of operations and financial condition.

Dry Leasing customers are primarily responsible for maintaining our aircraft. Although we require many of our customers to pay us amounts for supplemental maintenance, failure of a customer to perform required maintenance during the lease term could result in higher maintenance costs, a decrease in the value of our aircraft, the inability to re-lease aircraft at favorable rates, if at all, or impairment charges, which could have a material adverse effect on our business, results of operations and financial condition.

We may fail to realize the anticipated strategic and financial benefits of our Dry Leasing joint venture with Bain Capital.

Realization of the anticipated benefits from our Dry Leasing joint venture with Bain Capital is subject to a number of challenges and uncertainties, including: realization of satisfactory returns on investment, having investment goals that are consistent with our partner, partners each funding their share of required capital contributions and reaching agreement to hold and sell aircraft. If we fail to realize the expected benefits, it could have a material adverse effect on our business, results of operations and financial condition.

RISKS RELATED TO OUR INDUSTRY

The market for air cargo services is competitive and if we are unable to compete effectively, we may lose current customers or fail to attract new customers. We could also be adversely affected if a large number of long-haul freighter aircraft or freighter aircraft of different equipment types are introduced into the market.

Each of the markets in which we participate is competitive and fragmented. We offer a broad range of aviation services and our competitors vary by geographic market and type of service and include other international and domestic contract carriers, regional and national ground handling and logistics companies, internal cargo units of major airlines and third-party cargo providers. Competition in the air cargo and transportation market is influenced by several key factors, including quality, price and availability of assets and services. Regulatory requirements to operate in the U.S. domestic air cargo market have been reduced, facilitating the entry into domestic markets by foreign air cargo companies. If we were to lose any major customers and or fail to attract customers, it could have a material adverse effect on our business, results of operations and financial condition.

Additionally, an increase in the number of aircraft in the freight market could cause Yields and rates to fall and or could negatively affect our customer base. If either circumstance were to occur, our business, results of operations and financial condition could be materially and adversely affected.

We are subject to extensive governmental laws and regulations and failure to comply with these laws and regulations in the U.S. and abroad, or the adoption of any new laws, policies or regulations or changes to such regulations, may have an adverse effect on our business.

Our operations and our customers' operations are subject to complex aviation and transportation laws and regulations, including Title 49 of the U.S. Code, under which the DOT and the FAA exercise regulatory authority over air carriers. In addition, our business activities and our customers' business activities fall within the jurisdiction of various other federal, state, local and foreign authorities, including the U.S. Department of Defense, the TSA, U.S. Customs and Border Protection, the U.S. Treasury Department's Office of Foreign Assets Control and the U.S. EPA and similar state agencies. In addition, other jurisdictions in which we operate have similar regulatory regimes to which we are subjected. These laws and regulations may require us to maintain and comply with the terms of a wide variety of certificates, permits, licenses, noise abatement standards, maintenance and other requirements and our failure to do so could result in substantial fines or other sanctions. These U.S. and foreign aviation regulatory agencies have the authority to modify, amend, suspend or revoke the authority and licenses issued to us for failure to comply with provisions of law or applicable regulations and may impose civil or criminal penalties for violations of applicable rules and regulations. Such fines, sanctions or penalties, if imposed, could have a material adverse effect on our mode of conducting business, results of operations and financial condition. There can also be no assurance that laws and regulations will not be changed in ways that will decrease demand for our services or subject us to escalating costs. In addition, U.S. and foreign governmental authorities may adopt, amend or interpret accounting standards, tax laws, regulations or treaties that could require us to take additional and potentially costly compliance steps or result in our inability to operate some of our aircraft in certain countries, which could have a material adverse effect on our business, results of operations and financial condition.

International aviation is increasingly subject to requirements imposed or proposed by foreign governments. This is especially true in the areas of transportation security, aircraft noise and emissions control, and greenhouse gas emissions. These may be duplicative of, or incompatible with U.S. government requirements, resulting in increased compliance efforts and expense.

Foreign governments also place temporal and other restrictions on the ability of their own airlines to use aircraft operated by other airlines. For example, the European Aviation Safety Agency ("EASA") requires that the aircraft capacity secured from and operated by non-EU airlines meet internationally set standards and additional EASA requirements. These and other similar regulatory developments could have a material adverse effect on our business, results of operations and financial condition.

Initiatives to address global climate change may adversely affect our business and increase our costs.

To address climate change, governments have implemented and continue to pursue various means to reduce aviation-related greenhouse gas emissions. Compliance with these or other measures that are ultimately adopted could result in substantial costs for us. For instance, in October 2013, the ICAO reached a nonbinding agreement to develop global market-based measures to assist in achieving carbon-neutral growth. In October 2016, the ICAO approved the CORSIA, which is designed to offset any annual increases in total carbon emissions from international civil aviation above a baseline level determined by the average of 2019 and 2020 emissions. Although various details regarding the implementation of CORSIA still need to be finalized, a pilot phase will run from 2021 to 2023. Starting in 2019, the Airlines have voluntarily begun tracking and have begun reporting emissions in accordance with CORSIA in 2020, even though it is not yet mandatory in ICAO member countries. As a result, starting in 2024, the Airlines may need to purchase allowances to offset their assigned share of emissions overages based on the reporting for the 2021 to 2023 compliance period. For subsequent compliance periods, a similar procedure will apply.

Additionally, the EU continues to pursue a parallel track to address climate change through the EU ETS. Following the end of every year, to the extent the ETS applies, each airline must tender the number of allowances corresponding to carbon emissions generated by its covered flight activity during the year. If the airline's flight

activity during the year has produced carbon emissions exceeding the number of carbon emissions allowances that it has been awarded, the airline must acquire additional allowances from other airlines in the open market. In recognition of ICAO's recent adoption of CORSIA, the ETS suspension with respect to flights to and from non-European countries continues through December 31, 2023. However, the ETS remains applicable to intra-European flights.

In the U.S., various constituencies have continued to advocate for controls on greenhouse gas emissions. On August 15, 2016, the EPA issued a final rule finding that greenhouse gas emissions from aircraft cause or contribute to air pollution that may reasonably be anticipated to endanger public health and welfare. It is possible that these or other developments could lead to the future regulation of greenhouse gas emissions from aircraft in the U.S.

It is possible that these or similar climate change measures will be imposed in a manner adversely affecting airlines. The costs of complying with potential new environmental laws or regulations could have a material adverse effect on our business, results of operations and financial condition.

The airline industry is subject to numerous security regulations and rules that increase costs. Imposition of more stringent regulations and rules than those that currently exist could materially increase our costs.

The TSA has increased security requirements in response to increased levels of terrorist activity, and has adopted comprehensive new regulations governing air cargo transportation, including all-cargo services, in such areas as cargo screening and security clearances for individuals with access to cargo. Additional measures, including a requirement to screen cargo, have been proposed, which, if adopted, may have an adverse impact on our ability to efficiently process cargo and would increase our costs and those of our customers. The cost of compliance with increasingly stringent regulations could have a material adverse effect on our business, results of operations and financial condition.

If we are unable to attract and retain qualified pilots, it could have an adverse effect on our ability to maintain or expand our business operations.

In 2013, as earlier directed in Public Law 111-216, the FAA issued a final rule increasing the stringency of pilot and cockpit crew qualification and training requirements. As a result of that rule, all airline pilots, including new hires, must have a minimum of 1,500 hours of operational experience. The FAA rule also has increased the required training time for new commercial pilots. These regulatory changes and other factors, including reductions in the number of military pilots being trained by the U.S. armed forces, have led to increased demand for pilots. If we are unable to hire, train and retain qualified pilots, it could have an adverse effect on our ability to maintain or expand our business operations.

RISKS RELATED TO OUR LEASE AND DEBT OBLIGATIONS

Our substantial lease and debt obligations, including aircraft leases and other obligations, could impair our financial condition and adversely affect our ability to raise additional capital to fund our aircraft purchases, operations or other capital requirements, all of which could limit our financial resources and ability to compete, and may make us vulnerable to adverse economic events.

As of December 31, 2019, we had total debt obligations of approximately \$2.4 billion and total aircraft operating leases and other lease obligations of \$0.6 billion. We cannot provide assurance that we will be able to obtain future financing arrangements or on terms attractive to us. Our outstanding financial obligations could have negative consequences, including:

- making it more difficult to satisfy our debt and lease obligations;
- requiring us to dedicate a substantial portion of our cash flows from operations for interest, principal and lease payments and reducing our ability to use our cash flows to fund working capital and other general corporate requirements;
- increasing our vulnerability to general adverse economic and industry conditions; and

- limiting our flexibility in planning for, or reacting to, changes in our business and in our industry.

Our ability to service our debt and meet our lease and other obligations as they come due is dependent on our future financial and operating performance, as well as our continued access to the capital markets. All such matters are subject to various factors, including factors beyond our control, such as changes in global and regional economic conditions, changes in our industry, changes in interest or currency exchange rates, the price and availability of aircraft fuel and other costs, including labor and insurance. Accordingly, we cannot provide assurance that we will be able to meet our debt service, lease and other obligations as they become due and our business, results of operations and financial condition could be adversely affected under these circumstances.

Certain of our debt and lease obligations contain a number of restrictive covenants. In addition, many of our debt and lease obligations have cross-default and cross-acceleration provisions.

Restrictive covenants in certain of our debt and lease obligations, under certain circumstances, could impact our ability to:

- borrow under certain financing arrangements;
- consolidate or merge with or into other companies or sell substantially all our assets;
- expand significantly into lines of businesses beyond existing business activities or those which are cargo-related and or aviation-related and similar businesses; and or
- modify the terms of debt or lease financing arrangements.

In certain circumstances, a covenant default under one of our debt instruments could cause us to be in default of other obligations as well. Any unremedied defaults could lead to an acceleration of the amounts owed and potentially could cause us to lose possession or control of certain aircraft, either of which could have a material adverse effect on our business, results of operations and financial condition.

We may not have the ability to raise the funds necessary to settle conversions of our convertible notes or to repurchase the convertible notes upon either a fundamental change or a make-whole fundamental change, and our future debt may contain limitations on our ability to pay cash upon conversion or repurchase of the convertible notes.

We issued convertible senior notes in May 2017 and June 2015 (the “Convertible Notes”), which contain conditional conversion features that allow the holders of the Convertible Notes the option to convert if certain trading conditions are met or upon the occurrence of specified corporate events. In the event a conditional conversion feature of the Convertible Notes is triggered, holders of Convertible Notes will be entitled to convert the Convertible Notes at any time during specified periods at their option. If one or more holders elect to convert their Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock, we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their Convertible Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Notes as current on the balance sheet instead of as noncurrent, which could result in a material reduction of our net working capital.

The holders of the Convertible Notes also may require us to repurchase their Convertible Notes upon the occurrence of a fundamental change (as defined in the indenture governing the Convertible Notes) at a price equal to 100% of the principal amount of the Convertible Notes to be repurchased, plus accrued and unpaid interest, if any. However, we may not have enough available cash to fund these obligations or be able to obtain financing on favorable terms, or at all, at the time we are required to make repurchases of Convertible Notes surrendered or Convertible Notes being converted. Our failure to repurchase Convertible Notes at a time when the repurchase is required by the applicable indenture or to pay any cash payable on future conversions of the Convertible Notes as required by the applicable indenture would constitute a default under such indenture, which could result in acceleration of the principal amount of the notes and additional funding obligations by us.

In addition, if a make-whole fundamental change (as defined in the applicable indenture), including specified corporate transactions, occurs prior to the maturity date, under certain circumstances, it would increase the conversion rate. The increase in the conversion rate would be determined based on the date on which the specified corporate transaction becomes effective and the price paid (or deemed to be paid) per share of our common stock in such transaction, but in no event would increase to greater than 16.3713 shares of our common stock for our convertible notes issued in 2017 and 13.5036 shares of common stock for our convertible notes issued in 2015 per \$1,000 of principal, subject to adjustment in the same manner as the conversion rates. The increase in the conversion rate for Convertible Notes converted in connection with a make-whole fundamental change may result in us having to pay out additional cash in respect of the Convertible Notes upon conversion, or result in additional dilution to our shareholders if the conversion is settled, at our election, in shares of our common stock.

The Convertible Note hedge and warrant transactions may affect the value of our common stock.

In connection with the Convertible Notes offerings, we entered into Convertible Note hedge transactions with option counterparties. The Convertible Note hedge transactions are expected generally to reduce the potential dilution to our common stock upon any conversion of notes and or offset any cash payments we are required to make in excess of the principal amount of converted notes, as the case may be. We also entered into warrant transactions with the option counterparties. However, the warrant transactions could separately have a dilutive effect on our earnings per share to the extent that the market price per share of our common stock exceeds the applicable strike prices of the warrants. Accordingly, when the Convertible Note hedge transactions and the warrant transactions are taken together, the extent to which the Convertible Note hedge transactions reduce the potential dilution to our common stock (or the cash payments in excess of the principal amount of the notes) upon conversion of the notes is effectively capped by the warrant transactions at the strike price of the warrants.

The option counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various hedging transactions, including (without limitation) derivatives, with respect to our common stock and or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the maturity of the notes (and are likely to do so during any observation period related to a conversion of notes). This activity could cause or avoid an increase or a decrease in the market price of our common stock.

RISKS RELATED TO OWNERSHIP OF OUR COMMON STOCK

U.S. citizenship requirements may limit common stock voting rights.

Under U.S. federal law and DOT requirements, we must be owned and actually controlled by “citizens of the United States,” a statutorily defined term requiring, among other things, that not more than 25% of our issued and outstanding voting stock be owned and controlled, directly or indirectly, by non-U.S. citizens. The DOT periodically conducts airline citizenship reviews and, if it finds that this requirement is not met, may require adjustment of the voting rights of the airline’s issued shares.

As one means to effect compliance, our certificate of incorporation and by-laws provide that the failure of non-U.S. citizens to register their shares on a separate stock record, which we refer to as the “Foreign Stock Record,” results in a suspension of their voting rights. Our by-laws further limit the number of shares of our capital stock that may be registered on the Foreign Stock Record to 25% of our issued and outstanding shares. Registration on the Foreign Stock Record is made in chronological order based on the date we receive a written request for registration. As a result, if a non-U.S. citizen acquires shares of our common stock and does not or is not able to register those shares on our Foreign Stock Record, they may lose their ability to vote those shares.

Provisions in our restated certificate of incorporation and by-laws and Delaware law, and our issuance of warrants to Amazon, might discourage, delay or prevent a change in control of AAWW and, therefore, depress the trading price of our common stock.

Provisions of our restated certificate of incorporation, by-laws and Delaware law may render more difficult or discourage any attempt to acquire our company, even if such acquisition may be believed to be favorable to the interests of our stockholders. These provisions may also discourage bids for our common stock at a premium over

market price or adversely affect the market price of our common stock. In addition, the vesting of warrants issued by us to Amazon will generally, subject to certain exceptions, be accelerated upon a change of control of our company, which may discourage attempts to acquire our company.

Our common stock share price is subject to fluctuations in value.

The trading price of our common shares is subject to material fluctuations in response to a variety of factors, including quarterly variations in our operating results, conditions of the airfreight market and global economic conditions or other events and factors that are beyond our control.

In the past, following periods of significant volatility in the overall market and in the market price of a company's securities, securities class action litigation has been instituted against these companies in some circumstances. If this type of litigation were instituted against us following a period of volatility in the market price for our common stock, it could result in substantial costs and a diversion of our management's attention and resources, which could have a material adverse effect on our business, results of operations and financial condition.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Aircraft

The following tables provide information about AAWW's aircraft and customer-provided aircraft:

AAWW Aircraft

The following table summarizes AAWW's aircraft as of December 31, 2019:

Segment and Aircraft Type	Configuration	Owned*	Leased**	Total***	Average Age Years
ACMI and Charter Segments					
747-8F.....	Freighter	10	-	10	7.1
747-400.....	Freighter	8	19	27	19.6
747-400BCF.....	Converted Freighter	2	2	4	26.4
747-400.....	Passenger	5	-	5	23.7
767-300ER.....	Passenger	5	-	5	26.5
767-300ER.....	Converted Freighter	3	-	3	26.7
Total.....		33	21	54	19.2
Dry Leasing Segment					
777-200LRF.....	Freighter	8	-	8	8.6
767-300ERF.....	Converted Freighter	21	-	21	23.9
757-200.....	Freighter	1	-	1	30.4
737-800.....	Passenger	1	-	1	11.9
737-300.....	Freighter	1	-	1	27.1
Total.....		32	-	32	20.0
Total Fleet		65	21	86	19.5

* See Note 8 to our Financial Statements for a description of our financing facilities.

** See Note 9 to our Financial Statements for a description of our lease obligations.

*** Includes aircraft held for sale except for two owned aircraft previously used for training purposes.

Lease expirations for our leased aircraft included in the above tables range from March 2020 to June 2032.

Customer-provided Aircraft for CMI Service

The following table summarizes customer-provided aircraft as of December 31, 2019:

Aircraft Type	Configuration	Provided by	Total
777-200.....	Freighter	DHL	6
747-400.....	Freighter	NCA*	5
747-400.....	Dreamlifter	Boeing**	4
767-300.....	Freighter	DHL	2
767-200.....	Freighter	DHL	9
767-200.....	Passenger	MLW***	1
737-800.....	Freighter	Amazon	5
737-400.....	Freighter	DHL	5
Total.....			<u>37</u>

* Aircraft owned by Nippon Cargo Airlines Co., Ltd. ("NCA")

** Aircraft owned by The Boeing Company ("Boeing")

*** Aircraft owned by MLW Air, LLC ("MLW Air")

Ground Facilities

Our principal office is located in Purchase, New York, where we lease approximately 120,000 square feet of office space under a long-term lease, which expires in 2027. This office includes both operational and administrative support functions. We also lease approximately 44,000 square feet of office space in Florence, Kentucky for operational support functions which expires in 2021 and approximately 16,600 square feet of office space in Hong Kong for sales and administrative support which expires in 2025. In October 2019, we entered into a long-term lease for a building with approximately 100,000 square feet of office space in Erlanger, Kentucky for operational support functions commencing in the first half of 2021. This property is expected to replace the office space in Florence, Kentucky when that lease expires. In addition, we lease a variety of smaller offices and ramp space at various airport and regional locations generally on a short-term basis.

ITEM 3. LEGAL PROCEEDINGS

The information required in response to this Item is set forth in Note 13 to our Financial Statements, and such information is incorporated herein by reference. Such description contains all of the information required with respect hereto.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

John W. Dietrich. Mr. Dietrich, age 55, became our President and Chief Executive Officer in January 2020. He was also elected to our Board of Directors at such time. Prior to January 2020, he served as our President and Chief Operating Officer from July 2019 and our Executive Vice President and Chief Operating Officer from September 2006. In addition, he was President and Chief Operating Officer of Atlas Air, Inc. from October 2014 to December 2019. During the period from March 2003 to September 2006, Mr. Dietrich held a number of senior executive positions in the Company, including Senior Vice President, General Counsel, Chief Human Resources Officer, Corporate Secretary and head of the Corporate Communications function. Mr. Dietrich joined Atlas in 1999 as Associate General Counsel. Prior to joining us, he was a litigation attorney at United Airlines from 1992 to 1999, where he provided legal counsel to all levels of management, particularly on employment and commercial litigation issues. He also serves as Chairman of the National Defense Transportation Association and a director of the National Air Courier Association. Mr. Dietrich earned a Bachelor's of Science degree from Southern Illinois University and received his Juris Doctorate, cum laude, from the University of Illinois at Chicago John Marshall Law School. He is a member of the New York, Illinois and Colorado Bars.

James Forbes. Mr. Forbes, age 62, was elected our Executive Vice President and Chief Operating Officer in January 2020. He also serves as Executive Vice president and Chief Operating Officer of Atlas Air, Inc. and Southern Air, Inc. Prior to January 2020, he was Senior Vice President and Chief Operating Officer of Southern Air, Inc. since April 2016. Mr. Forbes has over 40 years of aviation operating experience, including more than 20 years with the Company. He joined us in 1997 as Senior Director of Ground Operations, where he helped construct the global infrastructure upon which we have grown. He became Vice President, Worldwide Ground Operations in 2001, overseeing station operations for all of Atlas Air, Inc. and Polar Air Cargo, Inc. In 2008, Mr. Forbes was named Senior Vice President for System Performance and Quality for Polar, where he led the transformation of an all-cargo network into a leading on-time express operation that supports DHL's worldwide air network. He held that position until April 2016, when he was promoted to lead Southern Air operations.

Adam R. Kokas. Mr. Kokas, age 48, has been Executive Vice President since January 2014 and General Counsel and Secretary since October 2006. He also served as our Chief Human Resources Officer from November 2007 to March 2018. Prior to January 2014, he was Senior Vice President from October 2006. Mr. Kokas joined us from Ropes & Gray LLP, where he was a partner in their Corporate Department, focusing on general corporate, securities, transactions and business law matters. Prior to joining Ropes & Gray, Mr. Kokas was a partner at Kelley Drye & Warren LLP, where he joined as an associate in 2001. At both Kelley Drye and Ropes & Gray, Mr. Kokas represented us in a variety of matters, including corporate finance and merger and acquisition transactions, corporate

governance matters, securities matters, and other general corporate issues. Mr. Kokas serves as a Vice Chair of the International Air Transport Association's Legal Advisory Council and is a director of the Society of Corporate Governance. He also served as the Chairman of the Board of the Cargo Airlines Association from 2011 to 2019. Mr. Kokas earned a Bachelor of Arts degree from Rutgers University and is a cum laude graduate of the Boston University School of Law, where he was an Edward M. Hennessey scholar. Mr. Kokas is a member of the New York and New Jersey Bars.

Michael T. Steen. Mr. Steen, age 53, has been Executive Vice President and Chief Commercial Officer since November 2010. In addition, he was named President and Chief Executive Officer of Titan Aviation Holdings, Inc. effective October 2014. Prior to November 2010, he was our Senior Vice President and Chief Marketing Officer from April 2007. Mr. Steen joined us from Exel plc where he served as Senior Vice President of Sales and Marketing. Mr. Steen led the sales and marketing activities for Exel Freight's management and technology sector. Following Exel's acquisition by Deutsche Post World Net, he held senior-level positions with the merged company in global supply chain logistics. Prior to joining Exel, he served in a variety of roles with KLM Cargo over 11 years, including Vice President of the Americas, Head of Global Sales and Marketing for the Logistics Unit and Director of Sales for EMEA. Mr. Steen is a Director for CHC Helicopter since May 2017 and is the Vice Chairman for IATA's Cargo Committee. Mr. Steen earned a degree in economic science from Katrinelund in Gothenburg, Sweden, and is an alumnus of the Advanced Executive Program at the Kellogg School of Management at Northwestern University.

Spencer Schwartz. Mr. Schwartz, age 53, has been Executive Vice President since January 2014 and Chief Financial Officer since June 2010. Prior to January 2014, he was Senior Vice President from June 2010. Prior to June 2010, he was our Vice President and Corporate Controller from November 2008. Mr. Schwartz joined us from Mastercard Incorporated, where he was employed for over 12 years and served as Group Head of Global Risk Management; Senior Vice President and Business Financial Officer; Senior Vice President, Corporate Controller and Chief Accounting Officer; and Vice President of Taxation. Prior to joining Mastercard, Mr. Schwartz held financial positions of increasing responsibility with Price Waterhouse LLP (now PricewaterhouseCoopers LLP) and Carl Zeiss, Inc. Mr. Schwartz earned a Bachelor's degree in Accounting from The Pennsylvania State University and a Master's degree in Business Administration, with a concentration in management, with honors, from New York University's Leonard N. Stern School of Business. He is a certified public accountant.

Keith H. Mayer. Mr. Mayer, age 54, has been Senior Vice President and Chief Accounting Officer since January 2018 and Corporate Controller since November 2010. Prior to January 2018, he was Vice President since November 2010. Mr. Mayer joined us from PepsiCo, Inc. ("PepsiCo"). In his most recent role at PepsiCo, he served as Chief Financial Officer of an international coffee partnership between PepsiCo and Starbucks Corporation. Mr. Mayer also served PepsiCo in a variety of roles since 1999, including Director of External Reporting, Assistant Controller for PepsiCo International, Senior Group Manager of Financial Accounting for Frito-Lay North America, and Group Manager of Technical Accounting. Prior to joining PepsiCo, Mr. Mayer held financial positions of increasing responsibility with Coopers & Lybrand LLP (now PricewaterhouseCoopers LLP). Mr. Mayer earned a Bachelor's degree in Accounting from the University of Bridgeport where he graduated *magna cum laude*. He is a certified public accountant.

Executive Officers are elected by our board of directors, and their terms of office continue until the next annual meeting of the board of directors or until their successors are elected and have qualified. There are no family relationships among our executive officers.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Since 2006, our common stock has been traded on The NASDAQ Global Select Market under the symbol “AAWW”.

As of February 17, 2020, there were approximately 26.0 million shares of our common stock issued and outstanding, and 37 holders of record of our common stock.

See Note 16 to our Financial Statements for a discussion of our stock repurchase program.

Equity Compensation Plans

See Item 12, “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters” for information regarding our equity compensation plans as of December 31, 2019.

Dividends

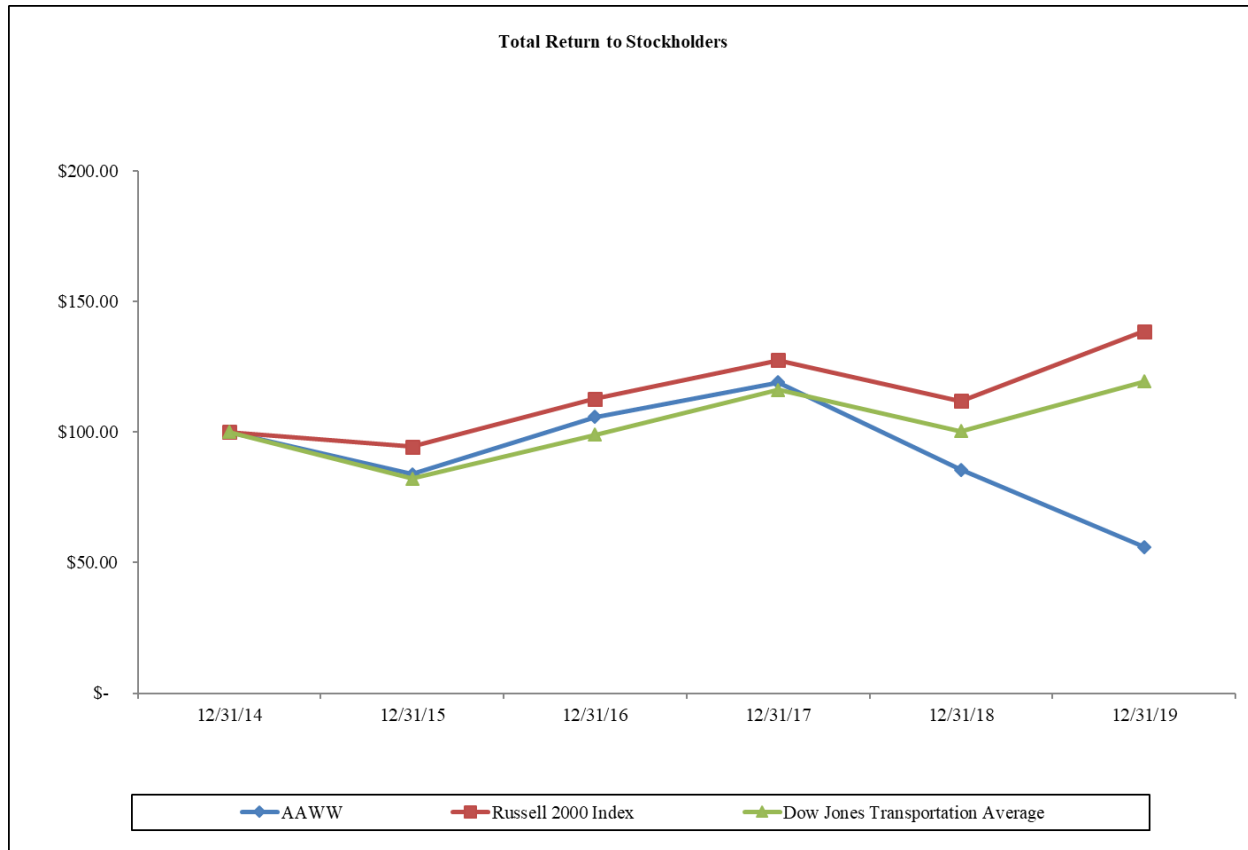
We have never paid a cash dividend with respect to our common stock and we do not anticipate paying a dividend in the foreseeable future. Moreover, certain of our financing arrangements contain financial covenants that could limit our ability to pay cash dividends.

Foreign Ownership Restrictions

Under our by-laws, U.S. federal law and DOT regulations, we must be controlled by U.S. citizens. In this regard, our President and at least two-thirds of our board of directors and officers must be U.S. citizens and not more than 25% of our outstanding voting common stock may be held by non-U.S. citizens. We believe that, during the period covered by this Report, we were in compliance with these requirements.

Performance Graph

The following graph compares the performance of AAWW common stock to the Russell 2000 Index and the Dow Jones Transportation Average for the period beginning December 31, 2014 and ending on December 31, 2019. The comparison assumes \$100 invested in each of our common stock, the Russell 2000 Index and the Dow Jones Transportation Average and reinvestment of all dividends.



Total Return between 12/31/14 and 12/31/19

Cumulative Return	12/31/14	12/31/15	12/31/16	12/31/17	12/31/18	12/31/19
AAWW	\$ 100.00	\$ 83.85	\$ 105.78	\$ 118.97	\$ 85.58	\$ 55.92
Russell 2000 Index	\$ 100.00	\$ 94.29	\$ 112.65	\$ 127.44	\$ 111.94	\$ 138.50
Dow Jones Transportation Average	\$ 100.00	\$ 82.15	\$ 98.95	\$ 116.11	\$ 100.33	\$ 119.27

ITEM 6. SELECTED FINANCIAL DATA

The selected statements of operations data for the years ended December 31, 2019, 2018 and 2017 and the selected balance sheet data as of December 31, 2019 and 2018 have been derived from our audited Financial Statements included elsewhere in this Report. The selected balance sheet data as of December 31, 2017, 2016 and 2015, and selected statements of operations data for the years ended December 31, 2016 and 2015 have been derived from our audited Financial Statements not included in this Report.

In the following table, all amounts are in thousands, except for per share data.

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Statement of Operations Data:					
Total operating revenues.....	\$2,739,189	\$2,677,724	\$2,156,460	\$1,839,627	\$1,822,659
Total operating expenses.....	3,200,160	2,394,182	1,914,486	1,671,316	1,699,154
Operating income (loss).....	(460,971)	283,542	241,974	168,311	123,505
Income (loss) from continuing operations, net of taxes (a) (b).....	(293,113)	270,647	224,338	42,625	7,286
Loss from discontinued operations, net of taxes (c).....	-	(80)	(865)	(1,109)	-
Net income (loss).....	<u>\$ (293,113)</u>	<u>\$ 270,567</u>	<u>\$ 223,473</u>	<u>\$ 41,516</u>	<u>\$ 7,286</u>
Earnings (loss) per share from continuing operations:					
Basic.....	<u>\$ (11.35)</u>	<u>\$ 10.60</u>	<u>\$ 8.89</u>	<u>\$ 1.72</u>	<u>\$ 0.29</u>
Diluted.....	<u>\$ (11.35)</u>	<u>\$ 5.22</u>	<u>\$ 8.68</u>	<u>\$ 1.70</u>	<u>\$ 0.29</u>
Loss per share from discontinued operations:					
Basic.....	<u>\$ -</u>	<u>\$ (0.00)</u>	<u>\$ (0.03)</u>	<u>\$ (0.04)</u>	<u>\$ -</u>
Diluted.....	<u>\$ -</u>	<u>\$ (0.00)</u>	<u>\$ (0.03)</u>	<u>\$ (0.04)</u>	<u>\$ -</u>
Earnings (loss) per share:					
Basic.....	<u>\$ (11.35)</u>	<u>\$ 10.60</u>	<u>\$ 8.85</u>	<u>\$ 1.67</u>	<u>\$ 0.29</u>
Diluted.....	<u>\$ (11.35)</u>	<u>\$ 5.22</u>	<u>\$ 8.64</u>	<u>\$ 1.65</u>	<u>\$ 0.29</u>
Balance Sheet Data:					
Total assets.....	\$5,385,641	\$5,534,792	\$4,955,462	\$4,247,379	\$4,164,403
Long-term debt (less current portion).....	\$1,984,902	\$2,205,005	\$2,008,986	\$1,666,663	\$1,739,496
Total equity.....	\$1,792,179	\$2,067,964	\$1,789,856	\$1,517,338	\$1,454,183

- (a) The results for 2019 included an impairment of 747-400 freighter aircraft and other assets held for sale of \$638.4 million (see Note 5 to our Financial Statements).
- (b) The results for 2017 included a \$130.0 million income tax benefit recorded as a result of the U.S. Tax Cuts and Jobs Act enacted on December 22, 2017 (see Note 10 to our Financial Statements).
- (c) See Note 2 to our Financial Statements for the presentation of Florida West International Airways, Inc. as a discontinued operation.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis should be read in conjunction with the Financial Statements included in Item 8 of this report.

Business Overview

We are a leading global provider of outsourced aircraft and aviation operating services. We operate the world's largest fleet of 747 freighters and provide customers a broad array of 747, 777, 767 and 737 aircraft for domestic, regional and international cargo and passenger operations. We provide unique value to our customers by giving them access to highly reliable modern production freighters that deliver the lowest unit cost in the marketplace combined with outsourced aircraft operating services that we believe lead the industry in terms of quality and global scale. Our customers include express delivery providers, e-commerce retailers, airlines, freight forwarders, the U.S. military and charter brokers. We provide global services with operations in Africa, Asia, Australia, Europe, the Middle East, North America and South America.

We believe that the following competitive strengths will allow us to capitalize on opportunities that exist in the global airfreight industry:

Market leader with leading-edge technology and differentiated, value-creating solutions

The 747-8F and 777-200LRF aircraft are two of the most efficient long-haul wide-body commercial freighters available and we are currently the only operator offering both of these aircraft under ACMI and CMI agreements. Our operating model deploys our aircraft to drive maximum utilization and value from our fleet. The scale of our fleet enables us to have aircraft available globally to respond to our customers' needs, both on a planned and ad hoc basis. We believe this provides us with a commercial advantage over our competitors that operate smaller and less flexible fleets.

Our Dry Leasing business is primarily focused on a portfolio of 777-200LRF aircraft, and our fleet of 767-300 freighter aircraft for regional and domestic applications. These aircraft are Dry Leased to customers on a long-term basis, which further diversifies our business mix and enhances our predictable, long-term revenue and earnings streams.

Stable base of contractual revenue and reduced operational risk

Our focus on providing long-term contracted aircraft and operating solutions to customers stabilizes our revenues and reduces our operational risk. ACMI and CMI contracts with customers generally range from two to seven years, although some contracts have shorter or longer durations. Dry Leasing contracts with customers generally range from five to twelve years. Under ACMI, CMI and Dry Leasing, our customers assume fuel, demand and price risk resulting in reduced operational risk for AAWW. ACMI, CMI and Dry Leasing contracts typically provide us with a guaranteed minimum level of revenue and target level of profitability.

Focus on asset optimization

By managing the largest fleet of outsourced freighter aircraft, we achieve significant economies of scale in areas such as aircraft maintenance, crew efficiency, crew training, inventory management and purchasing.

Our mix of aircraft is closely aligned with our customer needs. By providing the broadest array of 747, 777, 767 and 737 aircraft for domestic, regional and international applications, we believe that we are well-suited to meet the current and anticipated requirements of our customers.

We continually evaluate our fleet to ensure that we offer the most efficient and effective mix of aircraft to meet our customers' needs. Our service model is unique in that we offer a portfolio of operating solutions that complement our freighter aircraft businesses. We believe this allows us to improve the returns we generate from our asset base by allowing us to flexibly redeploy aircraft to meet changing market conditions, ensuring the maximum utilization of our fleet. Our Charter services complement our ACMI services by allowing us to increase aircraft utilization during open time and to react to changes in demand and Yield in these segments. We have employees

situated around the globe who closely monitor demand for commercial charter services in each region, enabling us to redeploy available aircraft quickly. We also endeavor to manage our portfolio to stagger contract terms, which mitigates our remarketing risks and aircraft down time.

Long-term strategic customer relationships and unique innovative service offerings

We combine the global scope and scale of our efficient aircraft fleet with high-quality, cost-effective operations and premium customer service to provide unique, fully integrated and reliable solutions for our customers. We believe this approach results in customers that are motivated to seek long-term relationships with us. This has historically allowed us to command higher prices than our competitors in several key areas. These long-term relationships help us to build resilience into our business model.

Our customers have access to our innovative solutions, such as inter-operable crews, flight scheduling, fuel-efficiency planning, and maintenance spare coverage, which, we believe, set us apart from other participants in the outsourced aircraft and aviation operating services market. Furthermore, we have access to valuable operating rights to restricted markets such as Brazil, Japan and China. We believe our freighter services allow our customers to effectively expand their capacity and operate dedicated freighter aircraft without simultaneously taking on exposure to fluctuations in the value of owned aircraft and, in the case of our ACMI and CMI contracts, long-term expenses relating to crews and maintenance. Dedicated freighter aircraft enable schedules to be driven by cargo rather than passenger demand (for those customers that typically handle portions of their cargo operations via belly capacity on passenger aircraft), which we believe allows our customers to drive higher contribution from cargo operations.

We are focused on providing safe, secure and reliable services. Atlas, Polar and Southern Air all have successfully completed the International Air Transport Association's Operational Safety Audit (IOSA), a globally recognized safety and quality standard.

We provide outsourced aircraft and aviation services to some of the world's premier express delivery providers, e-commerce retailers, airlines and freight forwarders. We will take advantage of opportunities to maintain and expand our relationships with our existing customers, while seeking new customers and new geographic markets.

Experienced management team

Our management team has extensive operating and leadership experience in the airfreight, airline, aircraft leasing and logistics industries at companies such as United Airlines, US Airways, Lufthansa Cargo, GE Capital Aviation Services, Air Canada, Canadian Airlines, American Airlines, JetBlue Airways, ICF International, ASTAR Air Cargo, DHL, KLM Cargo, Spirit Airlines, Singapore Airlines Cargo and China Cargo Airlines, as well as the United States Army, Navy, Air Force and Federal Air Marshal Service. In addition, our management team has a diversity of experience from other industries at companies such as Mastercard, PepsiCo, Moody's, Ralph Lauren, Kate Spade, Avon Products, New York Life Insurance, Hess and Unisys, as well as nationally recognized accounting and law firms. Our management team is led by John W. Dietrich, who has more than 30 years of experience in all facets of aviation and airline management. Mr. Dietrich has been with AAWW for over 20 years, including the last 13 years as Executive Vice President and Chief Operating Officer, and General Counsel for 4 years prior to that.

Business Strategy

Our strategy includes the following:

Focus on securing long-term customer contracts

We will continue to focus on securing long-term contracts with fast-growing customers, including those in express, e-commerce and the fastest-growing regional markets, which provide us with relatively stable revenue streams and margins. In addition, these agreements limit our direct exposure to fuel and other costs and mitigate the risk of fluctuations in both Yield and demand in the airfreight business, while also improving the overall utilization of our fleet.

Aggressively manage our fleet with a focus on leading-edge aircraft

We continue to actively manage our fleet of leading-edge wide-body freighter aircraft to meet customer demands. Our 747-8F and 777-200LRF freighter aircraft are primarily utilized in our ACMI business, while our 747-400s are utilized in our ACMI and Charter business. We aggressively manage our fleet to ensure that we provide our customers with the most efficient aircraft to meet their needs.

Our Dry Leasing business is primarily focused on a portfolio of modern, efficient 777-200LRF aircraft and our fleet of 767-300 freighter aircraft for regional and domestic applications. We will continue to explore opportunities to invest in additional aircraft.

Drive significant and ongoing productivity improvements

We continue to enhance our organization through a cost saving and productivity enhancing initiative called “Continuous Improvement.” We created a separate department to drive the process and to involve all areas of the organization in the effort to reexamine, redesign and improve the way we do business.

Selectively pursue and evaluate future acquisitions and alliances

From time to time, we explore business combinations, joint ventures and alliances with express delivery providers, e-commerce retailers, airlines, freight forwarders and other companies to enhance our competitive position, geographic reach and service portfolio.

Appropriately managing capital allocation and delivering value to shareholders

Our commitment to creating, enhancing and delivering value to our shareholders reflects a disciplined and balanced capital allocation strategy. Our focus is on maintaining a strong balance sheet, investing in modern efficient assets, and returning capital to shareholders.

Business Developments

ACMI and Charter results for 2019, compared with 2018, were impacted by the global airfreight environment and macroeconomic conditions, including the impact of tariffs, global trade tensions and geopolitical unrest in certain countries in South America. Those conditions, especially during the fourth quarter resulted in lower 747-400 commercial Charter Yields and Utilization.

During the fourth quarter of 2019, we recorded an impairment charge related to our 747-400 freighter fleet (see Note 5 to our Financial Statements). We continually assess our aircraft requirements and will make adjustments to our capacity as necessary. Some of these actions may include grounding or disposing of aircraft or engines, which could result in asset impairments or other charges in future periods.

During 2019, demand remained strong and often increased, compared to 2018, for our other freighter aircraft fleet types, which are primarily used to provide ACMI and CMI services for express and e-commerce customers.

In addition to the above factors, our results for 2019, compared with 2018, were impacted by labor-related service disruptions (see Note 13 to our Financial Statements).

Our ACMI results for 2019, compared with 2018, were also impacted by increased flying from the following:

- Between August 2016 and November 2018, we began CMI flying Boeing 767-300 freighter aircraft for Amazon that are Dry Leased from Titan. During 2019, there were an average of 18.6 767-300 aircraft equivalents operating for Amazon compared to an average of 15.2 767-300 aircraft equivalents operating in 2018.
- In February 2018, we signed long-term CMI and Dry Lease contracts with DHL for two 777-200 freighter aircraft. The first of the two aircraft was previously in CMI service with us and the second aircraft began CMI and Dry Lease service in July of 2018.
- In July 2018, we began ACMI flying a 747-400 freighter for Industria de Diseño Textil, S.A. (“Inditex”) on routes between the United States, Europe, and Asia.
- In September 2018, we began flying a second 747-400 freighter for Asiana Cargo on transpacific routes.
- In October 2018, we began flying a 747-400 freighter for SF Express on transpacific routes.
- In January 2019, we entered into an agreement to operate three incremental 747-400 freighters for Nippon Cargo Airlines on transpacific routes. The first two aircraft entered service in April and August 2019, and the third is expected to enter service in 2020.
- In March 2019, we entered into agreements with Amazon, which include CMI operation of five 737-800 freighter aircraft and up to 15 additional aircraft by May 2021. Between May and December 2019, we placed five aircraft into service.
- In June 2019, we entered into a CMI agreement with DHL to operate two 777-200 freighter aircraft on key global routes, both of which entered service near the end of the second quarter of 2019.
- In June 2019, we began flying a third 747-400 freighter for Asiana Cargo on transpacific routes following its return from DHL.

In January 2020, we entered into an ACMI agreement with EL AL Israel Airline Ltd. for a 747-400 freighter to provide additional capacity for its freight network. The aircraft entered service in January 2020.

In December 2019, a novel strain of coronavirus was reported in China and has since been reported in other countries. This outbreak has disrupted the global supply chains involving China and Asia, resulting in certain cancellations of cargo flights. Cancellations of passenger flights by other airlines to and from that region have also impacted our ability to position crewmembers for operating our aircraft. Although we expect the disruption from the virus to be temporary, given the dynamic nature of these circumstances, the duration of business disruption, the extent of customer cancellations and the related financial impact cannot be reasonably estimated at this time but could materially affect our ACMI and Charter segment results for the first quarter and full year of 2020.

In February 2018, we acquired a 777-200 freighter aircraft and Dry Leased it to DHL on a long-term basis, as described above. We completed the acquisition of a second 777-200 freighter aircraft and placed it into service with DHL in July 2018. As noted above, during 2019, there were an average of 19.1 aircraft equivalents Dry Leased to Amazon compared to an average of 15.1 aircraft equivalents in 2018.

Results of Operations

The following discussion should be read in conjunction with our Financial Statements and other financial information appearing and referred to elsewhere in this report. For a discussion of our results of operations for the year ended December 31, 2018 as compared to the year ended December 31, 2017, see Item 7 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, filed with the Securities and Exchange Commission on February 19, 2019.

Years Ended December 31, 2019 and 2018

Operating Statistics

The following tables compare our Segment Operating Fleet (average aircraft equivalents during the period) and total Block Hours operated:

Segment Operating Fleet*	<u>2019</u>	<u>2018</u>	<u>Inc/(Dec)</u>
ACMI			
747-8F Cargo.....	8.5	8.9	(0.4)
747-400 Cargo.....	17.9	17.2	0.7
747-400 Dreamlifter.....	3.5	3.0	0.5
777-200 Cargo.....	7.1	5.5	1.6
767-300 Cargo.....	24.9	21.4	3.5
767-200 Cargo.....	9.0	9.0	-
767-200 Passenger.....	1.0	1.0	-
737-800 Cargo.....	2.4	-	2.4
737-400 Cargo.....	5.0	5.0	-
747-400 Passenger.....	-	0.3	(0.3)
Total	<u>79.3</u>	<u>71.3</u>	<u>8.0</u>
Charter			
747-8F Cargo.....	1.5	1.1	0.4
747-400 Cargo.....	16.0	12.3	3.7
747-400 Passenger.....	4.3	2.9	1.4
767-300 Cargo.....	-	0.2	(0.2)
767-300 Passenger.....	4.9	4.2	0.7
Total.....	<u>26.7</u>	<u>20.7</u>	<u>6.0</u>
Dry Leasing			
777-200 Cargo.....	7.3	7.3	-
767-300 Cargo.....	21.1	17.2	3.9
757-200 Cargo.....	1.0	1.0	-
737-300 Cargo.....	1.0	1.0	-
737-800 Passenger.....	1.0	1.0	-
Total.....	<u>31.4</u>	<u>27.5</u>	<u>3.9</u>
Less: Aircraft Dry Leased to CMI customers	<u>(22.6)</u>	<u>(18.5)</u>	<u>(4.1)</u>
Total Operating Average Aircraft Equivalents	<u><u>114.8</u></u>	<u><u>101.0</u></u>	<u><u>13.8</u></u>

* ACMI average fleet excludes spare aircraft provided by CMI customers and Dry Leasing average fleet excludes aircraft held for sale.

Block Hours	<u>2019</u>	<u>2018</u>	<u>Inc/(Dec)</u>	<u>% Change</u>
Total Block Hours**	321,140	296,264	24,876	8.4%

** Includes ACMI, Charter and other Block Hours.

Operating Revenue

The following table compares our Operating Revenue (in thousands):

	<u>2019</u>	<u>2018</u>	<u>Inc/(Dec)</u>	<u>% Change</u>
Operating Revenue				
ACMI.....	\$ 1,247,770	\$ 1,192,704	\$ 55,066	4.6%
Charter	1,305,860	1,313,484	(7,624)	(0.6)%
Dry Leasing	200,781	168,470	32,311	19.2%
Customer incentive asset amortization	(33,135)	(16,176)	16,959	NM
Other	17,913	19,242	(1,329)	(6.9)%
Total Operating Revenue.....	<u>\$2,739,189</u>	<u>\$2,677,724</u>		

NM represents year-over-year changes that are not meaningful.

ACMI

	<u>2019</u>	<u>2018</u>	<u>Inc/(Dec)</u>	<u>% Change</u>
ACMI Block Hours.....	245,706	225,665	20,041	8.9%
ACMI Revenue Per Block Hour	\$ 5,078	\$ 5,285	\$ (207)	(3.9)%

ACMI revenue increased \$55.1 million, or 4.6%, primarily due to increased flying, partially offset by a decrease in Revenue per Block Hour. The increase in Block Hours was primarily driven by incremental CMI flying for our e-commerce and express customers. Partially offsetting this increase was a decrease from the two-month redeployment of two 747-8F aircraft to the Charter segment until we received regulatory approval and subsequently placed the aircraft with an ACMI customer. In addition, Block Hours were negatively impacted by lower utilization by our 747-400 ACMI customers related to the global airfreight environment and macroeconomic conditions. Revenue per Block Hour decreased primarily due to increased smaller-gauge 767 and 737 CMI flying. In addition, ACMI revenue was negatively impacted by labor-related service disruptions.

Charter

	<u>2019</u>	<u>2018</u>	<u>Inc/(Dec)</u>	<u>% Change</u>
Charter Block Hours:				
Cargo.....	51,982	50,798	1,184	2.3%
Passenger.....	20,565	17,683	2,882	16.3%
Total	<u>72,547</u>	<u>68,481</u>	<u>4,066</u>	<u>5.9%</u>
Charter Revenue Per Block Hour:				
Cargo.....	\$ 17,164	\$ 19,136	\$ (1,972)	(10.3)%
Passenger.....	\$ 20,113	\$ 19,306	\$ 807	4.2%
Charter.....	\$ 18,000	\$ 19,180	\$ (1,180)	(6.2)%

Charter revenue decreased \$7.6 million, or 0.6%, primarily due to a decrease in Revenue per Block Hour, partially offset by an increase in flying. Revenue per Block Hour decreased primarily due to a decrease in Yields for commercial customers reflecting the global airfreight environment and macroeconomic conditions. Partially offsetting this decrease were higher Yields (excluding fuel) on passenger flying, primarily driven by an increase in rates for the AMC and the expansion of our flying for sports teams and other VIP charter customers. The increase in Charter Block Hours was primarily driven by increased demand for passenger flying and the redeployment of 747-400 freighter aircraft from ACMI, partially offset by lower utilization primarily due to the global airfreight environment and political unrest in certain countries in South America. In addition, Charter revenue was negatively impacted by labor-related service disruptions.

Dry Leasing

Dry Leasing revenue increased \$32.3 million, or 19.2%, primarily due to \$22.3 million of revenue from maintenance payments related to the scheduled return of a 777-200 freighter aircraft and the placement of incremental aircraft. The additional aircraft included the placement of 767-300 converted freighter aircraft throughout 2018, as well as one 777-200 freighter aircraft in February 2018 and a second 777-200 freighter aircraft in July 2018.

Operating Expenses

The following table compares our Operating Expenses (in thousands):

	<u>2019</u>	<u>2018</u>	<u>Inc/(Dec)</u>	<u>% Change</u>
Operating Expenses				
Salaries, wages and benefits.....	\$ 599,811	\$ 536,120	\$ 63,691	11.9%
Aircraft fuel	483,827	467,569	16,258	3.5%
Maintenance, materials and repairs	381,701	359,300	22,401	6.2%
Depreciation and amortization	251,097	217,340	33,757	15.5%
Travel	189,211	166,487	22,724	13.6%
Aircraft rent	155,639	162,444	(6,805)	(4.2)%
Navigation fees, landing fees and other rent	144,809	158,911	(14,102)	(8.9)%
Passenger and ground handling services	130,698	118,973	11,725	9.9%
Loss on disposal of aircraft	5,309	-	5,309	NM
Special charge	638,373	9,374	628,999	NM
Transaction-related expenses	4,164	2,111	2,053	97.3%
Other.....	215,521	195,553	19,968	10.2%
Total Operating Expenses	<u>\$3,200,160</u>	<u>\$2,394,182</u>		

Salaries, wages and benefits increased \$63.7 million, or 11.9%, primarily due to increased flying, higher crew costs, including enhanced wages and work rules resulting from our interim agreement with the Southern Air pilots (see Note 13 to our Financial Statements), fleet growth initiatives and leadership transition costs. These increases were partially offset by a ratification bonus in 2018 related to the interim agreement with the Southern Air pilots. In addition, crew costs were negatively impacted by labor-related service disruptions.

Aircraft fuel increased \$16.3 million, or 3.5%, due to an increase in consumption related to increased flying, partially offset by a decrease in average fuel cost per gallon. We do not incur fuel expense in our ACMI or Dry Leasing businesses as the cost of fuel is borne by the customer. Average fuel cost per gallon and fuel consumption for 2019 and 2018 were:

	<u>2019</u>	<u>2018</u>	<u>Inc/(Dec)</u>	<u>% Change</u>
Average fuel cost per gallon	\$ 2.27	\$ 2.36	\$ (0.09)	(3.8)%
Fuel gallons consumed (000s).....	213,253	198,150	15,103	7.6%

Maintenance, materials and repairs increased by \$22.4 million, or 6.2%, primarily reflecting \$23.0 million of increased Line Maintenance expense due to increased flying and additional repairs performed, and \$5.6 million of increased Non-heavy Maintenance expense, partially offset by \$6.2 million of decreased Heavy Maintenance expense. The higher Line Maintenance primarily reflected increases of \$16.7 million for 767 aircraft and \$4.7 million for 747-400 aircraft. Heavy Maintenance expense on 747-8F aircraft increased \$8.0 million primarily due to an increase in the number of D Checks, partially offset by a decrease in the number of C Checks. Heavy Maintenance expense on 747-400 aircraft decreased \$16.1 million primarily due to a decrease in the number of engine overhauls and D Checks, partially offset by an increase in the number of C Checks and additional repairs performed. Heavy airframe maintenance checks and engine overhauls impacting Maintenance, materials and repairs for 2019 and 2018 were:

Heavy Maintenance Events	2019	2018	Inc/(Dec)
747-8F C Checks	3	4	(1)
747-400 C Checks	15	10	5
767 C Checks	3	2	1
747-8F D Checks.....	3	-	3
747-400 D Checks.....	1	2	(1)
CF6-80 engine overhauls	10	20	(10)

Depreciation and amortization increased \$33.8 million, or 15.5%, primarily due to additional aircraft that began operating in 2018, an increase in the amortization of deferred maintenance costs related to 747-8F engine overhauls (see Note 2 to our Financial Statements) and an increase in the scrapping of rotatable parts.

Travel increased \$22.7 million, or 13.6%, primarily due to increased flying and higher costs incurred as a result of labor-related service disruptions.

Aircraft rent decreased \$6.8 million, or 4.2%, primarily due to a write-down of 747-400 freighter aircraft operating lease right-of-use assets during the fourth quarter of 2019 (see Note 5 to our Financial Statements) and a reduction in the number of spare engines leased in 2019, partially offset by additional operating leases for 747-400 freighter aircraft that began flying during the second half of 2018.

Navigation fees, landing fees and other rent decreased \$14.1 million, or 8.9%, primarily due to a decrease in purchased capacity, which is a component of other rent, partially offset by increased flying.

Passenger and ground handling services increased \$11.7 million, or 9.9%, primarily due to increased passenger flying and higher costs incurred as a result of labor-related service disruptions.

Loss on disposal of aircraft in 2019 primarily represents a loss on the trade in of a GENx engine as part of an exchange transaction.

Special charge in 2019 primarily represents a \$580.3 million impairment charge related to the write-down of the 747-400 freighter fleet and a \$58.1 million impairment charge related to assets sold and held for sale including certain aircraft in our Dry Leasing portfolio, spare CF6-80 engines and 737-400 passenger aircraft for training purposes. Special charge in 2018 represents a \$9.4 million impairment loss on engines held for sale. See Note 5 to our Financial Statements for additional discussion about the Special charge. We may sell additional flight equipment, which could result in additional charges in future periods.

Transaction-related expenses in 2019 primarily relate to professional fees for a customer transaction with warrants (see Note 7 to our Financial Statements). Transaction-related expenses in 2018 were for the integration of Southern Air, which primarily included professional fees and integration costs.

Other increased \$20.0 million, or 10.2%, primarily due to start-up and other costs to meet fleet growth initiatives, as well as higher passenger taxes and commission expense on increased revenue from the AMC.

Non-operating (Income) Expenses

The following table compares our Non-operating (Income) Expenses (in thousands):

	2019	2018	Inc/(Dec)	% Change
Non-operating (Income) Expenses				
Interest income.....	\$ (4,296)	\$ (6,710)	\$ (2,414)	(36.0)%
Interest expense	120,330	119,378	952	0.8%
Capitalized interest	(2,274)	(4,727)	(2,453)	(51.9)%
Loss on early extinguishment of debt.....	804	-	804	NM
Unrealized gain on financial instruments	(75,109)	(123,114)	(48,005)	(39.0)%
Other (income) expense, net.....	(27,668)	(10,659)	17,009	159.6%

Unrealized gain on financial instruments represents the change in fair value of a customer warrant liability (see Note 7 to our Financial Statements) primarily due to changes in our common stock price.

Other (income) expense, net increased \$17.0 million, or 159.6%, primarily due to a \$27.6 million refund in 2019 of aircraft rent paid in previous years compared to a refund of \$12.4 million in 2018.

Income taxes. Our effective income tax rates were a benefit of 38.0% for 2019 and an expense of 12.5% for 2018. The effective income tax benefit rate for 2019 differed from tax at the U.S. statutory rate primarily due to a tax benefit related to the favorable completion of the IRS's examination of our 2015 income tax return, and to a lesser extent, a tax benefit from nontaxable changes in the fair value of a customer warrant liability (see Note 7 to our Financial Statements). The effective income tax expense rate for 2018 differed from the U.S. statutory rate primarily due to nondeductible and nontaxable changes in the fair value of a customer warrant liability (see Note 7 to our Financial Statements) and, to a lesser extent, an income tax benefit from the remeasurement of our deferred income tax liability for Singapore (See Note 10 to our Financial Statements).

Segments

We use an economic performance metric called Direct Contribution, which shows the profitability of each segment after allocation of direct operating and ownership costs. Direct Contribution includes Income (loss) from continuing operations before income taxes and excludes the following: Special charges, Transaction-related expenses, nonrecurring items, Losses (gains) on the disposal of aircraft, Losses on early extinguishment of debt, Unrealized (gains) losses on financial instruments, Gains on investments and Unallocated income and expenses, net. We operate our service offerings through the following reportable segments: ACMI, Charter and Dry Leasing. The following table compares the Direct Contribution for our reportable segments (see Note 12 to our Financial Statements for the reconciliation to Operating income) (in thousands):

	<u>2019</u>	<u>2018</u>	<u>Inc/(Dec)</u>	<u>% Change</u>
Direct Contribution:				
ACMI	\$ 218,459	\$ 235,706	\$ (17,247)	(7.3)%
Charter	149,372	211,661	(62,289)	(29.4)%
Dry Leasing	70,386	48,904	21,482	43.9%
Total Direct Contribution	<u>\$ 438,217</u>	<u>\$ 496,271</u>	<u>\$ (58,054)</u>	<u>(11.7)%</u>
Unallocated expenses and (income), net	<u>\$ 337,434</u>	<u>\$ 298,526</u>	<u>\$ 38,908</u>	<u>13.0%</u>

ACMI Segment

ACMI Direct Contribution decreased \$17.2 million, or 7.3%, primarily due to the global airfreight environment and macroeconomic conditions, higher crew costs, including enhanced wages and work rules resulting from our interim agreement with the Southern Air pilots (see Note 13 to our Financial Statements), and the two-month redeployment of two 747-8F aircraft to the Charter segment. In addition, ACMI Direct Contribution was impacted by labor-related service disruptions and start-up costs to meet customer growth initiatives. Partially offsetting these items was an increase in contribution from additional flying and a decrease in aircraft rent.

Charter Segment

Charter Direct Contribution decreased \$62.3 million, or 29.4%, primarily due to a decrease in commercial cargo Yields related to the global airfreight environment and macroeconomic conditions. In addition, Charter Direct Contribution was negatively impacted by labor-related service disruptions. Partially offsetting these decreases were an increase in passenger flying, earnings from two 747-8F aircraft during a two-month redeployment from the ACMI segment and a decrease in aircraft rent.

Dry Leasing Segment

Dry Leasing Direct Contribution increased \$21.5 million, or 43.9%, primarily due to revenue from maintenance payments related to the scheduled return of a 777-200 freighter aircraft and the placement of additional aircraft.

Unallocated expenses and (income), net

Unallocated expenses and (income), net increased \$38.9 million, or 13.0%, primarily due to fleet growth initiatives, increased amortization of a customer incentive asset and leadership transition costs, partially offset by a higher refund of aircraft rent paid in previous years.

Reconciliation of GAAP to non-GAAP Financial Measures

To supplement our Financial Statements presented in accordance with GAAP, we present certain non-GAAP financial measures to assist in the evaluation of our business performance. These non-GAAP financial measures include Adjusted income from continuing operations, net of taxes, Adjusted Diluted EPS from continuing operations, net of taxes and Adjusted earnings before interest, taxes, depreciation and amortization (“Adjusted EBITDA”), which exclude certain noncash income and expenses, and items impacting year-over-year comparisons of our results. These non-GAAP financial measures may not be comparable to similarly titled measures used by other companies and should not be considered in isolation or as a substitute for Income from continuing operations, net of taxes and Diluted EPS from continuing operations, net of taxes which are the most directly comparable measures of performance prepared in accordance with GAAP. Effective during the three months ended September 30, 2019, we changed our method of calculating Adjusted EBITDA to include Other non-operating expenses (income) to enhance the usefulness for investors and analysts, and the comparability of the calculation to that of other companies. Prior period amounts have been adjusted for comparability.

We use these non-GAAP financial measures in assessing the performance of our ongoing operations and in planning and forecasting future periods. These adjusted measures provide a more comparable basis to analyze operating results and earnings and are measures commonly used by shareholders to measure our performance. In addition, management’s incentive compensation is determined, in part, by using Adjusted income from continuing operations, net of taxes and Adjusted EBITDA. We believe that these adjusted measures, when considered together with the corresponding GAAP financial measures and the reconciliations to those measures, provide meaningful supplemental information to assist investors and analysts in understanding our business results and assessing our prospects for future performance.

The following is a reconciliation of Income (loss) from continuing operations, net of taxes and Diluted EPS from continuing operations, net of taxes to the corresponding non-GAAP financial measures (in thousands, except per share data):

	For the Years Ended December 31,		
	2019	2018	Percent Change
Income (loss) from continuing operations, net of taxes	\$ (293,113)	\$ 270,647	(208.3)%
Impact from:			
Customer incentive asset amortization	33,135	16,176	
Special charge	638,373	9,374	
Costs associated with transactions (a)	4,163	11,325	
Leadership transition costs	6,736	-	
Certain contract start-up costs (b)	3,497	-	
Noncash expenses and income, net (c)	18,267	16,852	
Unrealized (gain) loss on financial instruments	(75,109)	(123,114)	
Other, net (d)	3,170	963	
Income tax effect of reconciling items	(145,295)	2,103	
Special tax item (e)	(54,272)	-	
Adjusted income from continuing operations, net of taxes ...	\$ 139,552	\$ 204,326	(31.7)%
Weighted average diluted shares outstanding	25,828	28,281	
Add: dilutive warrant (f)	758	-	
dilutive restricted stock	64	-	
effect of convertible notes hedges (g)	-	(180)	
Adjusted weighted average diluted shares outstanding	<u>26,650</u>	<u>28,101</u>	
Adjusted Diluted EPS from continuing operations, net of taxes	\$ 5.24	\$ 7.27	(27.9)%

	For the Years Ended December 31,		
	2018	2017	Percent Change
Income from continuing operations, net of taxes	\$ 270,647	\$ 224,338	20.6%
Impact from:			
Customer incentive asset amortization	16,176	5,261	
Special charge, net	9,374	106	
Costs associated with transactions (a)	11,325	4,772	
Noncash expenses and income, net (c)	16,852	12,673	
Unrealized (gain) loss on financial instruments	(123,114)	12,533	
Other, net (d)	963	7,949	
Income tax effect of reconciling items	2,103	(3,962)	
Special tax item (e)	-	(129,977)	
Adjusted income from continuing operations, net of taxes ...	\$ 204,326	\$ 133,693	52.8%
Weighted average diluted shares outstanding	28,281	25,854	
Add: dilutive warrant (f)	-	1,293	
effect of convertible notes hedges (g)	(180)	(27)	
Adjusted weighted average diluted shares outstanding	<u>28,101</u>	<u>27,120</u>	
Adjusted Diluted EPS from continuing operations, net of taxes	\$ 7.27	\$ 4.93	47.5%

The following is a reconciliation of Income (loss) from continuing operations, net of taxes to Adjusted EBITDA (in thousands):

	For the Years Ended December 31,		
	2019	2018	Percent Change
Income (loss) from continuing operations, net of taxes	\$ (293,113)	\$ 270,647	(208.3)%
Interest expense, net	113,760	107,941	
Depreciation and amortization	251,097	217,340	
Income tax (benefit) expense.....	<u>(179,645)</u>	<u>38,727</u>	
EBITDA	(107,901)	634,655	
Customer incentive asset amortization	33,135	16,176	
Special charge.....	638,373	9,374	
Costs associated with transactions (a)	4,163	11,325	
Leadership transition costs	6,736	-	
Unrealized (gain) loss on financial instruments	(75,109)	(123,114)	
Other, net (d)	<u>5,379</u>	<u>2,855</u>	
Adjusted EBITDA	<u>\$ 504,776</u>	<u>\$ 551,271</u>	(8.4)%

	For the Years Ended December 31,		
	2018	2017	Percent Change
Income from continuing operations, net of taxes	\$ 270,647	\$ 224,338	20.6%
Interest expense, net.....	107,941	86,289	
Depreciation and amortization.....	217,340	166,713	
Income tax (benefit) expense.....	<u>38,727</u>	<u>(80,966)</u>	
EBITDA	634,655	396,374	
Customer incentive asset amortization	16,176	5,261	
Special charge, net	9,374	106	
Costs associated with transactions (a)	11,325	4,772	
Unrealized (gain) loss on financial instruments	(123,114)	12,533	
Other, net (d).....	<u>2,855</u>	<u>9,964</u>	
Adjusted EBITDA	<u>\$ 551,271</u>	<u>\$ 429,010</u>	28.5%

- (a) Costs associated with transactions in 2019 primarily relate to a customer transaction with warrants (see Note 7 to our Financial Statements) and other costs associated with our acquisition of Southern Air. Costs associated with transactions in 2018 and 2017 primarily related to costs associated with our acquisition of Southern Air.
- (b) Certain contract start-up costs represent unique training aircraft costs required for a new customer contract (see Note 7 to our Financial Statements).
- (c) Noncash expenses and income, net in 2019, 2018 and 2017 primarily related to amortization of debt discount on the convertible notes (see Note 8 to our Financial Statements).
- (d) Other, net in 2019 primarily relates to a loss on the sale of a GENx engine, a net insurance recovery, loss on early extinguishment of debt and accrual for legal matters and professional fees. Other, net in 2018 primarily relates to an accrual for legal matters and professional fees. Other, net in 2017 primarily relates to a U.S. Tax Cuts and Jobs Act bonus that was granted to eligible personnel below the officer level following enactment, a loss on early extinguishment of debt and an accrual for legal matters and professional fees.
- (e) Special tax item in 2019 represents the income tax benefit from the completion of the 2015 IRS examination that is not related to ongoing operations. Special tax item in 2017 represents the income tax effect of U.S. Tax Cuts and Jobs Act due to the revaluation of our U.S. net deferred tax liability (see Note 10 to our Financial Statements).
- (f) Dilutive warrants represent potentially dilutive common shares related to warrants issued to a customer (see Note 7 to our Financial Statements). These warrants are excluded from Diluted EPS from continuing operations, net of taxes prepared in accordance with GAAP when they would have been antidilutive.
- (g) Economic benefit from the convertible notes hedges in offsetting dilution from the convertible notes.

Liquidity and Capital Resources

Significant liquidity events during 2019 were as follows:

Debt Transactions

In March 2019, we borrowed \$19.7 million related to GEnx engine performance upgrade kits and overhauls under an unsecured five-year term loan at a fixed interest rate of 2.73%.

In August 2019, we refinanced a higher-rate secured term loan with a new \$74.0 million lower-rate secured five-year term loan with a final payment of \$32.0 million due in August 2024 related to spare GEnx engines at a fixed rate of 2.98%.

In November 2019, we borrowed \$22.3 million related to GEnx engine performance upgrade kits and overhauls under an unsecured five-year term loan at a fixed interest rate of 2.10%.

Operating Activities. For 2019, Net cash provided by operating activities was \$300.3 million, which primarily reflected noncash adjustments of \$638.4 million for a Special charge, \$316.8 million for Depreciation and amortization, \$180.6 million for deferred taxes and \$25.2 million for Stock-based compensation. Partially offsetting these items was a \$293.1 million Net Loss, a noncash adjustment of \$75.1 million for Unrealized gain on financial instruments, a \$66.8 million increase in Prepaid expenses, current assets, and other assets, a \$47.8 million decrease in Accounts payable and accrued liabilities, and a \$22.5 million increase in Accounts receivable. For 2018, Net cash provided by operating activities was \$425.6 million, which primarily reflected \$270.6 million of Net Income, noncash adjustments of \$265.6 million for Depreciation and amortization, \$42.6 million for deferred taxes and \$20.3 million for Stock-based compensation and a \$72.3 million increase in Accounts payable and accrued liabilities. Partially offsetting these items was a noncash adjustment of \$123.1 million for Unrealized gain on financial instruments, a \$74.0 million increase in Accounts receivable and a \$57.1 million increase in Prepaid expenses, current assets, and other assets.

Investing Activities. For 2019, Net cash used for investing activities was \$285.8 million, consisting primarily of \$214.2 million of payments for flight equipment and modifications, and \$133.6 million of core capital expenditures, excluding flight equipment and insurance proceeds of \$38.1 million. Payments for flight equipment and modifications during 2019 were primarily related to 767-300 passenger aircraft and related freighter conversion costs, spare engines and GEnx engine performance upgrade kits. All capital expenditures for 2019 were funded through working capital and the financings discussed above. For 2018, Net cash used for investing activities was \$701.3 million, consisting primarily of \$599.4 million of payments for flight equipment and modifications, and \$114.4 million of core capital expenditures, excluding flight equipment. Payments for flight equipment and modifications during 2018 were primarily related to the purchase of 777-200 aircraft, 767-300 passenger aircraft and related freighter conversion costs, spare engines and GEnx engine performance upgrade kits.

Financing Activities. For 2019, Net cash used for financing activities was \$133.9 million, which primarily reflected \$344.7 million of payments on debt obligations, partially offset by proceeds from debt issuance of \$116.0 million, proceeds from our revolver credit facility of \$100.0 million, and \$14.7 million of customer maintenance reserves and deposits received. For 2018, Net cash provided by financing activities was \$216.6 million, which primarily reflected proceeds from debt issuance of \$471.6 million, and \$15.6 million of customer maintenance reserves and deposits received, partially offset by \$250.0 million of payments on debt obligations.

Significant liquidity events during 2020 were as follows:

In February 2020, we extended dry leases with a customer for two 777-200LRF aircraft, each for a period of ten years from the end of the existing lease term. In connection with the lease extensions, we refinanced two secured term loans that were due in 2020 with two new term loans. One term loan is for 126 months in the amount of \$82.0 million at a fixed interest rate of 3.27% with a final payment of \$12.5 million due in July 2030. The other term loan is for 130 months in the amount of \$82.0 million at a fixed interest rate of 3.28% with a final payment of \$12.5 million due in November 2030. The new term loans are each secured by a mortgage against a 777-200LRF

aircraft and contain customary covenants and events of default with principal and interest payable quarterly.

In February 2020, we received net proceeds of \$12.4 million from the sale of one Titan aircraft that was classified as held for sale at December 31, 2019 (see Note 5 to our Financial Statements).

We consider Cash and cash equivalents, Short-term investments, Restricted cash, Net cash provided by operating activities, availability under our revolving credit facility and the proceeds from the sale of nonessential assets to be sufficient to meet our debt and lease obligations, and to fund core capital expenditures for 2020. Core capital expenditures for 2020, which are expected to range between \$90.0 to \$100.0 million exclude flight equipment and capitalized interest.

We may access external sources of capital from time to time depending on our cash requirements, assessments of current and anticipated market conditions, and the after-tax cost of capital. To that end, we filed a shelf registration statement with the SEC in May 2017 that enables us to sell a yet to be determined amount of debt and or equity securities over the subsequent three years, depending on market conditions, our capital needs and other factors. Our access to capital markets can be adversely impacted by prevailing economic conditions and by financial, business and other factors, some of which are beyond our control. Additionally, our borrowing costs are affected by market conditions and may be adversely impacted by a tightening in credit markets.

We do not expect to pay any significant U.S. federal income tax in this decade. Our business operations are subject to income tax in several foreign jurisdictions. We do not expect to pay any significant cash income taxes in foreign jurisdictions for at least several years. Due to the U.S. Tax Cuts and Jobs Act, we may repatriate the unremitted earnings of our foreign subsidiaries to the extent taxes are insignificant.

Contractual Obligations

The table below provides details of our balances outstanding under credit agreements and future cash contractual obligations as of December 31, 2019 (in millions):

	Total Obligations	Payments Due by Period					
		2020	2021	2022	2023	2024	Thereafter
Debt ⁽¹⁾	\$ 2,443.9	\$ 397.0	\$ 269.5	\$ 592.1	\$ 447.2	\$ 481.9	\$ 256.2
Interest on debt ⁽²⁾	293.2	77.3	63.5	51.7	38.8	21.0	40.9
Finance leases ⁽³⁾	84.9	16.4	6.0	6.0	6.0	6.0	44.5
Interest on finance leases.....	44.3	5.5	5.1	4.9	4.7	4.5	19.6
Operating leases ⁽³⁾	584.6	164.1	167.8	119.1	66.5	53.4	13.7
Total Contractual Obligations	<u>\$ 3,450.9</u>	<u>\$ 660.3</u>	<u>\$ 511.9</u>	<u>\$ 773.8</u>	<u>\$ 563.2</u>	<u>\$ 566.8</u>	<u>\$ 374.9</u>

- (1) Debt reflects gross amounts (see Note 8 to our Financial Statements for a discussion of the related unamortized discount).
- (2) Amount represents interest on fixed and floating rate debt at December 31, 2019.
- (3) See Note 9 to our Financial Statements for a discussion of our operating and finance lease liabilities.

In addition to the amounts in the table above, we have a cash commitment of up to \$40.0 million to fund our Dry Leasing joint venture with Bain Capital before December 2022.

Description of Our Debt Obligations

See Note 8 to our Financial Statements for a description of our debt obligations.

Off-Balance Sheet Arrangements

See Note 9 to our Financial Statements for a discussion of aircraft-leasing trusts that meet the criteria for variable interest entities. We have not consolidated any of the aircraft-leasing trusts in which we are not the primary beneficiary.

We hold equity interests in two joint venture arrangements to help develop a diversified freighter aircraft Dry

Leasing portfolio and to purchase rotatable parts and repair services for those parts, primarily for our 747-8F aircraft. Neither of these joint ventures qualifies for consolidated accounting treatment. The assets and liabilities of these entities are not included in our Consolidated Balance Sheets and we record our net investment under the equity method of accounting. See Note 2 to our Financial Statements for further discussion.

Critical Accounting Policies and Estimates

General Discussion of Critical Accounting Policies and Estimates

An appreciation of our critical accounting policies and estimates is important to understand our financial results. Our Financial Statements are prepared in conformity with GAAP. Our critical policies require management to make estimates and judgments that affect the amounts reported. Actual results may differ significantly from those estimates. The following is a brief description of our current critical accounting policies involving significant management judgment:

Accounting for Long-Lived Assets

We record our property and equipment at cost, and once assets are placed in service, we depreciate them on a straight-line basis over their estimated useful lives to their estimated residual values over periods not to exceed forty years for flight equipment (from date of original manufacture) and three to five years for ground equipment.

We record right-of-use assets for operating leases with terms greater than 12 months, including renewal options when appropriate, as the present value of fixed lease payments over the lease term. Since our leases do not typically provide a readily determinable discount rate, we use our incremental borrowing rate to discount lease payments to present value. Operating lease right-of-use assets are amortized over each lease term.

We record finite-lived intangible assets acquired at fair value and amortize them over their estimated useful lives. The estimated useful lives are based on estimates of the period during which the assets are expected to generate revenue.

We record impairment charges for long-lived assets when events and circumstances indicate that the assets may be impaired, the undiscounted cash flows estimated to be generated by those assets are less than their carrying amount and the net book value of the assets exceeds their estimated fair value. In making these determinations, we use certain assumptions and estimates, including, but not limited to: (i) estimated fair value of the assets, and (ii) estimated future cash flows expected to be generated by these assets, which are based on additional assumptions such as asset utilization, revenue generated, associated costs, length of service and estimated residual values. In developing these estimates for flight equipment and operating lease right-of-use assets, we use external appraisals, adjusted for maintenance condition, as necessary; bids received from independent third parties; and industry data. To estimate the fair value of operating lease right-of-use assets, we determine the present value of current market fixed lease rates utilizing our incremental borrowing rate for the remaining term of each lease. To conduct impairment testing, we group assets and liabilities at the lowest level for which identifiable cash flows are largely independent of cash flows of other assets and liabilities. For flight equipment, operating lease right-of-use assets and finite-lived intangible assets used in our ACMI and Charter segments, assets are grouped at the operating fleet level. For flight equipment and finite-lived intangible assets used in our Dry Leasing segment, assets are assessed at the individual aircraft or engine level. Our long-lived asset groups evaluated for impairment can include flight equipment such as the aircraft, engines, rotatable parts, leasehold improvements, operating lease right-of-use assets, as well as associated finite-lived intangible assets and deferred maintenance costs.

For assets classified as held for sale, an impairment charge is recognized when the estimated fair value less the cost to sell the asset is less than its carrying amount. Fair value is determined using external appraisals or bids received from independent third parties.

Heavy Maintenance

Except for engines used on our 747-8F aircraft, we account for Heavy Maintenance costs for airframes and

engines used in our ACMI and Charter segments using the direct expense method. Under this method, Heavy Maintenance costs are charged to expense upon induction, based on our best estimate of the costs. When estimating the expected cost for each Heavy Maintenance event, management considers multiple factors, including historical costs and experience, and information provided by third-party maintenance providers. These estimates may be subsequently adjusted for changes and the final determination of actual costs incurred. This method can result in expense volatility between quarterly and annual periods, depending on the number and type of Heavy Maintenance events performed.

We account for Heavy Maintenance costs for airframes and engines used in our Dry Leasing segment and engines used on our 747-8F aircraft using the deferral method. Under this method, we defer the expense recognition of scheduled Heavy Maintenance events, which are amortized over the estimated period until the next scheduled Heavy Maintenance event is required.

Income Taxes

Deferred income taxes are recognized for the tax consequences of reporting items in our income tax returns at different times than the items are reflected in our financial statements. These temporary differences result in deferred tax assets and liabilities that are calculated by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities. If necessary, deferred income tax assets are reduced by a valuation allowance to an amount that is determined to be more likely than not recoverable. We must make significant estimates and assumptions about future taxable income and future tax consequences when determining the amount, if any, of the valuation allowance.

We have recorded reserves for income taxes that may become payable in future years. Although management believes that its positions taken on income tax matters are reasonable, we have nevertheless established tax reserves in recognition that various taxing authorities may challenge certain of the positions taken by us, potentially resulting in additional liabilities for taxes.

Goodwill

Goodwill represents the excess of an acquisition's purchase price over the fair value of the identifiable net assets acquired and liabilities assumed. Goodwill is not amortized, but tested for impairment annually during the fourth quarter of each year, or more frequently if certain events or circumstances indicate that an impairment loss may have been incurred. We may elect to perform a qualitative analysis on the reporting unit that has goodwill to determine whether it is more likely than not that fair value of the reporting unit is less than its carrying value. Under the qualitative approach, we consider various market factors to determine whether events and circumstances have affected the fair value of the reporting unit. If we determine that it is more likely than not that the reporting unit's fair value is less than its carrying amount, or if we elect not to perform a qualitative analysis, we perform a quantitative analysis to determine whether any goodwill impairment exists.

Fair value is determined using a discounted cash flow analysis based on key assumptions including, but not limited to, (i) a projection of revenues, expenses and other cash flows; (ii) terminal period earnings; and (iii) an assumed discount rate. If the fair value of the reporting unit is less than the carrying amount, the difference is written off as an impairment up to the carrying amount of goodwill.

Legal and Regulatory Matters

We are party to legal and regulatory proceedings with respect to a variety of matters in multiple jurisdictions. We evaluate the likelihood of an unfavorable outcome of these proceedings each quarter. Our judgments are subjective and are based on the status of the legal or regulatory proceedings, the merits of our defenses and consultation with legal counsel.

Recent Accounting Pronouncements

See Note 2 to our Financial Statements for a discussion of recent accounting pronouncements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We currently do not hedge against foreign currency fluctuations or aircraft fuel. The potential loss arising from adverse changes to the price and availability of aircraft fuel and interest rates is discussed below. The sensitivity analyses presented herein do not consider the effects that such adverse changes might have on our overall financial performance, nor do they consider additional actions we may take to mitigate our exposure to such changes.

Aircraft Fuel. Our results of operations are affected by changes in the price and availability of aircraft fuel. Our exposure to fluctuations in fuel price is limited to the commercial portion of our Charter business only, but this risk is partially mitigated by using indexed fuel price adjustments for certain commercial charter contracts. The ACMI and Dry Leasing segments have no direct fuel price exposure because the related contracts require our customers to pay for aircraft fuel. Similarly, we generally have no fuel price risk for AMC charters because the price is set under our contract with the AMC, and we receive or make payments to adjust for price increases and decreases from the contractual rate.

Variable Interest Rates. Our earnings are affected by changes in interest rates due to the impact those changes have on interest expense from variable rate debt instruments and on interest income generated from our cash and investment balances. As of December 31, 2019, approximately \$166.9 million of our debt at face value had variable interest rates. If interest rates would have increased or decreased by a hypothetical 20% in the underlying rate as of December 31, 2019, our annual interest expense would have changed in 2019 by approximately \$1.1 million.

Foreign Currency. We have limited exposure to market risk from changes in foreign currency exchange rates, interest rates and equity prices that could affect our results of operations and financial condition. Our largest exposure comes from the Brazilian real.

Stock Price. Our earnings are affected by changes in our common stock price due to the impact those changes have on the fair value of our liability for warrants issued to a customer (See Note 7 to our Financial Statements for a description of the warrants). As of December 31, 2019, our customer warrant liability was \$24.3 million. If our stock price would have increased or decreased resulting in a hypothetical 20% change in the fair value of the customer warrant liability as of December 31, 2019, we would have recognized an additional unrealized loss or gain of approximately \$4.9 million in 2019.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Atlas Air Worldwide Holdings, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Atlas Air Worldwide Holdings, Inc. and its subsidiaries (the “Company”) as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive income (loss), stockholders’ equity and cash flows for each of the three years in the period ended December 31, 2019, including the related notes and schedule of valuation and qualifying accounts for each of the three years in the period ended December 31, 2019 appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Heavy Maintenance Costs

As described in Note 2 to the consolidated financial statements, the Company accounts for heavy maintenance costs for airframes and engines used in the ACMI and Charter segments using the direct expense method, except for engines used on 747-8F aircraft, which are accounted for using the deferral method. Heavy maintenance costs for airframes and engines used in the Dry Leasing segment are accounted for using the deferral method. Under the direct expense method, heavy maintenance costs are charged to expense upon induction, based on management's best estimate of the costs. Under the deferral method, the Company defers the expense recognition of scheduled heavy maintenance events, which are amortized over the estimated period until the next scheduled heavy maintenance event is required. Heavy maintenance costs are included in operating expenses and are presented as a component of the maintenance, materials and repairs expense of \$381.7 million for the year ended December 31, 2019. Accrued heavy maintenance is included in accrued liabilities and represents a significant portion of the maintenance accruals of \$136.3 million (which includes heavy maintenance costs that are direct expensed, deferred, or accounted for as capital expenditures) as of December 31, 2019. When estimating the expected cost for each heavy maintenance event, management considers multiple factors, including historical costs and experience and information provided by third party maintenance providers. These estimates may be subsequently adjusted for changes and the final determination of actual costs incurred.

The principal considerations for our determination that performing procedures relating to heavy maintenance costs is a critical audit matter are there was significant judgment by management when developing the estimated costs for heavy maintenance events. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and in evaluating audit evidence relating to the estimated costs for uncompleted heavy maintenance events and management's significant assumptions, including historical costs and experience and information provided by third party maintenance providers.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the accounting for heavy maintenance costs, including controls over management's process to

estimate and monitor the costs of uncompleted heavy maintenance events. These procedures also included, among others, testing management's process for developing the estimated costs for heavy maintenance events. This included evaluating the appropriateness of the methods and reasonableness of the significant assumptions used by management in developing the estimated costs for heavy maintenance events, testing the completeness and accuracy of historical costs and experience data used in the estimate, and assessing management's process for monitoring the estimated costs of ongoing heavy maintenance events. Evaluating management's assumptions related to the estimated costs for heavy maintenance events involved evaluating whether the assumptions used by management were reasonable considering (i) past performance of comparable heavy maintenance events, (ii) testing information from third party maintenance providers on a sample basis, and (iii) whether the assumptions were consistent with evidence obtained in other areas of the audit, such as testing for unrecorded liabilities and subsequent event procedures.

Long-Lived Assets - Impairment of 747-400 Freighter Fleet and Related Assets & Impairment of Assets Held For Sale

As described in Note 5 to the consolidated financial statements, the Company recognized an impairment charge of \$580.3 million for the year ended December 31, 2019 related to its 747-400 freighter fleet, as well as the related engines, operating lease right-of-use assets, rotatable parts, and other related flight equipment in that asset group. Management records impairment charges for long-lived assets when events and circumstances indicate that the assets in an asset group may be impaired, the undiscounted cash flows estimated to be generated by those assets are less than their associated carrying amount, and the net book value of the assets exceeds their associated estimated fair value. In determining the fair value of the owned assets in the 747-400 freighter asset group, management obtained appraisals or bids from independent third parties, which considered the effects of the current market environment, age of the assets, and marketability. For rotatable parts, the appraisals considered the maintenance condition of the parts. For owned 747-400 freighter aircraft and spare engines, management made adjustments to the appraisals to reflect the impact of their current maintenance condition to determine fair value. Management determined the fair value of operating lease right-of-use assets based on the present value of current market fixed lease rates utilizing the Company's incremental borrowing rate for the remaining term of each lease. In addition, the Company recognized an impairment charge of \$58.1 million for the year ended December 31, 2019 related to the writedown of other flight equipment that was sold or is held for sale as of December 31, 2019. In determining the fair value of assets held for sale, management used bids received for those assets from independent third parties.

The principal considerations for our determination that performing procedures relating to the impairment of long-lived assets related to the 747-400 freighter fleet and related assets and assets held for sale is a critical audit matter are there was significant judgment by management when determining the fair value measurements used in calculating the related impairment charges. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and in evaluating audit evidence relating to the estimated fair value of the 747-400 freighter asset group and the other flight equipment held for sale as of December 31, 2019. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's impairment assessment, including controls relating to the valuation of 747-400 freighter asset group and the other flight equipment held for sale. These procedures also included, among others, testing management's process for determining the fair value of the 747-400 freighter asset group and other flight equipment held for sale. This included evaluating the appropriateness of the impairment model, testing the completeness, accuracy, and relevance of underlying data used in the impairment model, and evaluating the reasonableness of management's determination of fair value. Evaluating the reasonableness of management's determination of fair value for the 747-400 freighter asset group involved evaluating the appraisals or bids from independent third parties and for owned 747-400 freighter aircraft and spare engines, evaluating the adjustments made by management to reflect the impact of their current maintenance condition. Evaluating the reasonableness of management's determination of fair value for the operating lease right-of-use assets involved evaluating the reasonableness of the present value of current market fixed lease rates utilizing the Company's incremental borrowing rate for the remaining term of each lease for leased flight equipment. Evaluating the reasonableness of management's determination of fair value for the other flight equipment held for sale as of December 31, 2019 involved evaluating the reasonableness of the bids received for those assets from independent third parties on a

sample basis. Professionals with specialized skill and knowledge were used to assist in evaluating the appropriateness of the impairment model and certain significant inputs and assumptions, including current market fixed lease rates and the reasonableness of adjustments made to reflect maintenance condition.

/s/ PricewaterhouseCoopers LLP
New York, New York
February 24, 2020

We have served as the Company's auditor since 2007.

Atlas Air Worldwide Holdings, Inc.
Consolidated Balance Sheets
(in thousands, except share data)

	<u>December 31,</u> <u>2019</u>	<u>December 31,</u> <u>2018</u>
Assets		
Current Assets		
Cash and cash equivalents.....	\$ 103,029	\$ 221,501
Short-term investments	879	15,624
Restricted cash	10,401	11,240
Accounts receivable, net of allowance of \$1,822 and \$1,563, respectively	290,119	269,320
Prepaid expenses, assets held for sale and other current assets	228,103	112,146
Total current assets.....	<u>632,531</u>	<u>629,831</u>
Property and Equipment		
Flight equipment	4,880,424	5,213,734
Ground equipment.....	83,584	75,939
Less: accumulated depreciation	(977,883)	(860,354)
Flight equipment modifications in progress.....	67,101	32,916
Property and equipment, net	<u>4,053,226</u>	<u>4,462,235</u>
Other Assets		
Operating lease right-of-use assets	231,133	-
Deferred costs and other assets	391,895	345,037
Intangible assets, net and goodwill	76,856	97,689
Total Assets	<u><u>\$ 5,385,641</u></u>	<u><u>\$ 5,534,792</u></u>
Liabilities and Equity		
Current Liabilities		
Accounts payable	\$ 79,683	\$ 87,229
Accrued liabilities	481,725	465,669
Current portion of long-term debt and finance leases.....	395,781	264,835
Current portion of long-term operating leases	141,973	-
Total current liabilities	<u>1,099,162</u>	<u>817,733</u>
Other Liabilities		
Long-term debt and finance lease	1,984,902	2,205,005
Long-term operating leases.....	392,832	-
Deferred taxes	74,040	256,970
Financial instruments and other liabilities	42,526	187,120
Total other liabilities	<u>2,494,300</u>	<u>2,649,095</u>
Commitments and contingencies		
Equity		
Stockholders' Equity		
Preferred stock, \$1 par value; 10,000,000 shares authorized; no shares issued	-	-
Common stock, \$0.01 par value; 100,000,000 shares authorized; 31,048,842 and 30,582,571 shares issued, 25,870,876 and 25,590,293 shares outstanding (net of treasury stock), as of December 31, 2019 and December 31, 2018, respectively	310	306
Additional paid-in-capital	761,715	736,035
Treasury stock, at cost; 5,177,966 and 4,992,278 shares, respectively	(213,871)	(204,501)
Accumulated other comprehensive loss.....	(2,818)	(3,832)
Retained earnings.....	1,246,843	1,539,956
Total stockholders' equity.....	<u>1,792,179</u>	<u>2,067,964</u>
Total Liabilities and Equity	<u><u>\$ 5,385,641</u></u>	<u><u>\$ 5,534,792</u></u>

See accompanying Notes to Consolidated Financial Statements

Atlas Air Worldwide Holdings, Inc.
Consolidated Statements of Operations
(in thousands, except per share data)

	For the Years Ended December 31,		
	2019	2018	2017
Operating Revenue	\$ 2,739,189	\$ 2,677,724	\$ 2,156,460
Operating Expenses			
Salaries, wages and benefits	599,811	536,120	456,075
Aircraft fuel.....	483,827	467,569	333,046
Maintenance, materials and repairs.....	381,701	359,300	273,676
Depreciation and amortization	251,097	217,340	166,713
Travel	189,211	166,487	144,699
Aircraft rent.....	155,639	162,444	142,945
Navigation fees, landing fees and other rent.....	144,809	158,911	116,318
Passenger and ground handling services.....	130,698	118,973	107,787
Loss (gain) on disposal of aircraft	5,309	-	(31)
Special charge	638,373	9,374	106
Transaction-related expenses	4,164	2,111	4,509
Other	215,521	195,553	168,643
Total Operating Expenses	3,200,160	2,394,182	1,914,486
Operating Income (Loss)	(460,971)	283,542	241,974
Non-operating Expenses (Income)			
Interest income.....	(4,296)	(6,710)	(6,009)
Interest expense.....	120,330	119,378	99,687
Capitalized interest	(2,274)	(4,727)	(7,389)
Loss on early extinguishment of debt	804	-	167
Unrealized (gain) loss on financial instruments	(75,109)	(123,114)	12,533
Other (income) expense, net	(27,668)	(10,659)	(387)
Total Non-operating Expenses (Income).....	11,787	(25,832)	98,602
Income (loss) from continuing operations before income taxes.....	(472,758)	309,374	143,372
Income tax (benefit) expense.....	(179,645)	38,727	(80,966)
Income (loss) from continuing operations, net of taxes.....	(293,113)	270,647	224,338
Loss from discontinued operations, net of taxes.....	-	(80)	(865)
Net Income (Loss)	\$ (293,113)	\$ 270,567	\$ 223,473
Earnings (loss) per share from continuing operations:			
Basic.....	\$ (11.35)	\$ 10.60	\$ 8.89
Diluted	\$ (11.35)	\$ 5.22	\$ 8.68
Loss per share from discontinued operations:			
Basic.....	\$ -	\$ (0.00)	\$ (0.03)
Diluted	\$ -	\$ (0.00)	\$ (0.03)
Earnings (loss) per share:			
Basic.....	\$ (11.35)	\$ 10.60	\$ 8.85
Diluted	\$ (11.35)	\$ 5.22	\$ 8.64
Weighted average shares:			
Basic.....	25,828	25,542	25,241
Diluted	25,828	28,281	25,854

See accompanying Notes to Consolidated Financial Statements

Atlas Air Worldwide Holdings, Inc.
Consolidated Statements of Comprehensive Income (Loss)
(in thousands)

	For the Years Ended December 31,		
	2019	2018	2017
Net Income (Loss)	\$ (293,113)	\$ 270,567	\$ 223,473
Other comprehensive income:			
Reclassification to interest expense	1,336	1,485	1,621
Income tax expense (benefit)	(322)	(354)	(621)
Other comprehensive income	1,014	1,131	1,000
Comprehensive Income (Loss)	\$ (292,099)	\$ 271,698	\$ 224,473

See accompanying Notes to Consolidated Financial Statements

Atlas Air Worldwide Holdings, Inc.
Consolidated Statements of Cash Flows
(in thousands)

	For the Years Ended December 31,		
	2019	2018	2017
Operating Activities:			
Income (loss) from continuing operations, net of taxes	\$ (293,113)	\$ 270,647	\$ 224,338
Less: Loss from discontinued operations, net of taxes.....	-	(80)	(865)
Net Income (Loss)	(293,113)	270,567	223,473
Adjustments to reconcile Net Income (Loss) to net cash provided by operating activities:			
Depreciation and amortization.....	316,821	265,553	197,463
Accretion of debt securities discount.....	(244)	(888)	(1,172)
Provision for allowance for doubtful accounts.....	41	12	198
Loss on early extinguishment of debt.....	804	-	167
Special charge, net of cash payments.....	638,373	9,374	106
Unrealized loss (gain) on financial instruments	(75,109)	(123,114)	12,533
Loss (gain) on disposal of aircraft	5,309	-	(31)
Deferred taxes.....	(180,553)	42,580	(81,330)
Stock-based compensation	25,189	20,305	22,319
Changes in:			
Accounts receivable.....	(22,524)	(74,038)	(33,201)
Prepaid expenses, current assets and other assets.....	(66,843)	(57,081)	(67,341)
Accounts payable and accrued liabilities.....	(47,807)	72,310	58,535
Net cash provided by operating activities	300,344	425,580	331,719
Investing Activities:			
Capital expenditures	(133,554)	(114,415)	(87,555)
Payments for flight equipment and modifications.....	(214,236)	(599,401)	(458,464)
Investment in joint ventures	(2,028)	(1,050)	-
Proceeds from insurance.....	38,133	-	-
Proceeds from investments.....	15,624	13,604	4,462
Proceeds from disposal of engines	10,300	-	-
Net cash used for investing activities	(285,761)	(701,262)	(541,557)
Financing Activities:			
Proceeds from debt issuance	115,992	471,625	620,568
Payment of debt issuance costs	(2,404)	(9,622)	(14,664)
Payments of debt and finance lease obligations	(344,674)	(250,015)	(207,093)
Proceeds from revolving credit facility	100,000	135,000	150,000
Payment of revolving credit facility	-	(135,000)	(150,000)
Customer maintenance reserves and deposits received.....	14,736	15,590	25,784
Customer maintenance reserves paid	(8,174)	(250)	(18,538)
Proceeds from sale of convertible note warrants.....	-	-	38,148
Payments for convertible note hedges	-	-	(70,140)
Purchase of treasury stock	(9,370)	(10,769)	(10,613)
Net cash provided by (used for) financing activities.....	(133,894)	216,559	363,452
Net increase (decrease) in cash, cash equivalents and restricted cash	(119,311)	(59,123)	153,614
Cash, cash equivalents and restricted cash at the beginning of period.....	232,741	291,864	138,250
Cash, cash equivalents and restricted cash at the end of period.....	\$ 113,430	\$ 232,741	\$ 291,864
Noncash Investing and Financing Activities:			
Acquisition of flight equipment included in Accounts payable and accrued liabilities	\$ 37,390	\$ 23,498	\$ 68,732
Acquisition of property and equipment acquired under operating leases	\$ 28,827	\$ -	\$ -
Acquisition of flight equipment under finance lease.....	\$ 10,825	\$ -	\$ 30,419

See accompanying Notes to Consolidated Financial Statements

Atlas Air Worldwide Holdings, Inc.
Consolidated Statements of Stockholders' Equity
(in thousands, except share data)

	Common Stock	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Retained Earnings	Total Equity
Balance at December 31, 2016	\$ 296	\$ (183,119)	\$ 657,082	\$ (4,993)	\$ 1,048,072	\$ 1,517,338
Net Income	-	-	-	-	223,473	223,473
Other comprehensive income	-	-	-	1,000	-	1,000
Stock-based compensation	-	-	22,319	-	-	22,319
Purchase of 195,831 shares of treasury stock	-	(10,613)	-	-	-	(10,613)
Issuance of 471,043 shares of restricted stock	5	-	(5)	-	-	-
Equity component of convertible notes, net of tax	-	-	43,256	-	-	43,256
Purchase of convertible note hedges, net of tax	-	-	(45,065)	-	-	(45,065)
Issuance of warrants	-	-	38,148	-	-	38,148
Balance at December 31, 2017	\$ 301	\$ (193,732)	\$ 715,735	\$ (3,993)	\$ 1,271,545	\$ 1,789,856
Net Income	-	-	-	-	270,567	270,567
Other comprehensive income	-	-	-	1,131	-	1,131
Cumulative effect of change in accounting principle	-	-	-	-	(3,126)	(3,126)
Stock-based compensation	-	-	20,305	-	-	20,305
Purchase of 180,084 shares of treasury stock	-	(10,769)	-	-	-	(10,769)
Issuance of 477,923 shares of restricted stock	5	-	(5)	-	-	-
Reclassification of tax effect on other comprehensive loss	-	-	-	(970)	970	-
Balance at December 31, 2018	\$ 306	\$ (204,501)	\$ 736,035	\$ (3,832)	\$ 1,539,956	\$ 2,067,964
Net Loss	-	-	-	-	(293,113)	(293,113)
Other comprehensive income	-	-	-	1,014	-	1,014
Stock-based compensation	-	-	25,189	-	-	25,189
Customer warrant	-	-	495	-	-	495
Purchase of 185,688 shares of treasury stock	-	(9,370)	-	-	-	(9,370)
Issuance of 466,271 shares of restricted stock	4	-	(4)	-	-	-
Balance at December 31, 2019	\$ 310	\$ (213,871)	\$ 761,715	\$ (2,818)	\$ 1,246,843	\$ 1,792,179

See accompanying Notes to Consolidated Financial Statements

Atlas Air Worldwide Holdings, Inc.
Notes to Consolidated Financial Statements
December 31, 2019

1. Basis of Presentation

Our consolidated financial statements include the accounts of the holding company, Atlas Air Worldwide Holdings, Inc. (“AAWW”), and its consolidated subsidiaries. AAWW is the parent company of Atlas Air, Inc. (“Atlas”) and Southern Air Holdings, Inc. (“Southern Air”). AAWW is also the parent company of several subsidiaries related to our dry leasing services (collectively referred to as “Titan”). AAWW has a 51% equity interest and 75% voting interest in Polar Air Cargo Worldwide, Inc. (“Polar”). We record our share of Polar’s results under the equity method of accounting.

Intercompany accounts and transactions have been eliminated. We account for investments in entities under the equity method of accounting when we hold between 20% and 50% ownership in the entity and exercise significant influence or when we are not the primary beneficiary of a variable interest entity. The terms “we,” “us,” “our,” and the “Company” mean AAWW and all entities included in its consolidated financial statements.

We provide outsourced aircraft and aviation operating services throughout the world, serving Africa, Asia, Australia, Europe, the Middle East, North America and South America through: (i) contractual service arrangements, including those through which we provide aircraft to customers and value-added services, including crew, maintenance and insurance (“ACMI”), as well as those through which we provide crew, maintenance and insurance, but not the aircraft (“CMI”); (ii) cargo and passenger charter services (“Charter”); and (iii) dry leasing aircraft and engines (“Dry Leasing” or “Dry Lease”).

Except for per share data, all dollar amounts are in thousands unless otherwise noted.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (“GAAP”) requires us to make estimates and judgments that affect the amounts reported in these financial statements and the related disclosures. Actual results may differ from those estimates. Estimates are used in determining, among other items, asset lives and residual values, cash flows and fair values for impairments, operating lease right-of-use assets, heavy maintenance costs, income tax accounting, business combinations, intangible assets, warrants, contingent liabilities (including, but not limited to litigation accruals), valuation allowances (including, but not limited to, those related to receivables, expendable parts inventory and deferred taxes), revenue, stock-based compensation and self-insurance employee benefit accruals.

Revenue Recognition

ACMI and CMI Services

Our performance obligations under ACMI contracts involve outsourced cargo and passenger aircraft operating services, including the provision of an aircraft, crew, maintenance and insurance. Our performance obligations under CMI contracts also involve outsourced aircraft operating services, generally including the provision of crew, line maintenance and insurance, but not the aircraft. ACMI and CMI contracts generally provide for the transfer of the benefits from these performance obligations on a combined basis through the operation of the aircraft over time. The time interval between when an aircraft departs the terminal until it arrives at the destination terminal is measured in hours and called “Block Hours.” Customers assume fuel, demand and price risk. Generally, customers are also responsible for landing, navigation and most other operational fees and costs and, in the case of CMI customers, the provision of the aircraft and heavy and non-heavy maintenance. When we act as an agent for costs reimbursed by customers, such reimbursed amounts are recorded as Operating Revenue, net of the related costs, when the costs are incurred. When we are responsible for any of these costs, such reimbursed amounts are recorded as Operating Revenue and the costs are recorded as Operating Expenses as incurred.

Revenue from ACMI and CMI contracts is typically recognized over time as the services are performed based on Block Hours operated on behalf of a customer during a given month. Revenue for contracts with scheduled rate changes, excluding inflationary adjustments, is recognized over the term of the contract using an estimated average rate per Block Hour, which requires significant judgment to estimate the total number of Block Hours expected. Any revenue adjustments, including those related to minimum contracted Block Hour guarantees and on-time performance targets, are recognized over the applicable measurement period for the adjustment.

ACMI and CMI customers are generally billed monthly based on Block Hours operated on behalf of a customer during a given month, as defined contractually. Payment terms and conditions vary by contract, although terms generally require partial payment for minimum contracted Block Hour guarantees in advance of the services being provided. Since advance payments are typically made shortly before the services are performed, such payments are not considered significant financing components.

Charter Services

Our performance obligations under Charter contracts involve the provision of cargo and passenger aircraft charter services to customers, including the U.S. Military Air Mobility Command (“AMC”), brokers, freight forwarders, direct shippers, airlines, sports teams and fans, and private charter customers. Our obligations are for one or more flights based on a specific origin and destination. We also provide limited airport-to-airport cargo services to select markets, including several cities in South America. The customer pays a fixed charter fee or a variable fee generally based on the weight of cargo flown and we typically bear all direct operating costs for both cargo and passenger charters, which include fuel, insurance, landing and navigation fees, and most other operational fees and costs. When we purchase cargo capacity from our ACMI customers for Charter flights, we are responsible for selling the capacity we purchase. We record revenue related to such purchased capacity as part of Charter revenue and record the related expenses in Navigation fees, landing fees and other rent.

Revenue from Charter contracts is typically recognized over time as the services are performed based on Block Hours operated on behalf of a customer. Any revenue adjustments related to on-time performance targets with the AMC are recognized over the applicable measurement period for the adjustment. We generally expense sales commissions when incurred because the amortization period is less than one year. Payment terms and conditions vary by charter contract, although many contracts require payment in advance of the services being provided. Since advance payments are typically made shortly before the services are performed, such payments are not considered significant financing components.

Dry Leasing

Our performance obligations under Dry Lease contracts involve the provision of aircraft and engines to customers for compensation that is typically based on a fixed monthly amount and all are accounted for as operating leases. We record Dry Lease rental income from fixed payments on a straight-line basis over the term of the operating lease. Dry Lease rental income subject to adjustment based on an index is recognized on a straight-line basis over each adjustment period. Our Dry Leases typically do not contain purchase options, renewal options or residual guarantees. In addition, our Dry Leases typically do not contain early termination options. If they do, there are typically substantial termination penalties. Rentals received but unearned under the lease agreements are recorded in deferred revenue and included in Accrued liabilities until earned.

To manage our residual value risk, we require lessees to perform maintenance on the Dry Leased assets and they may also be required to make maintenance payments to us during or at the end of the lease term. When an aircraft is returned at the end of lease, if we choose not to re-lease or sell the returned aircraft, we typically have the ability to operate the aircraft in our ACMI and Charter segments.

Customer maintenance reserves are amounts received during the lease term that are subject to reimbursement to the lessee upon the completion of qualifying maintenance work on the specific Dry Leased asset and are included in Accrued liabilities. We defer revenue recognition for customer maintenance reserves until we are able to finalize the amount, if any, to be reimbursed to the lessee, which is typically at the end of the lease.

End of lease maintenance payments are amounts received upon return of the Dry Leased asset based on the utilization of the asset during the lease term. Such payments made to us are recognized as revenue at the end of the lease.

Other Services

Other services primarily include administrative and management support services and flight simulator training. Revenue for these services is recognized when the services are provided.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, demand deposits and other cash investments that are highly liquid in nature and have original maturities of three months or less at acquisition.

Short-term Investments

Short-term investments are primarily comprised of certificates of deposit, current portions of debt securities and money market funds.

Restricted Cash

Cash that is restricted under secured aircraft debt agreements, whereby it can only be used to make principal and interest payments on the related debt secured by those aircraft, is classified as Restricted cash.

Accounts Receivable

We perform a monthly evaluation of our accounts receivable and establish an allowance for doubtful accounts based on our best estimate of probable credit losses resulting from the inability or unwillingness of our customers to make required payments. Account balances are charged off against the allowance when we determine that the receivable will not be recovered.

Expendable Parts

Expendable parts, materials and supplies for flight equipment are carried at average acquisition costs and are included in Prepaid expenses, held for sale and other current assets. When used in operations, they are charged to maintenance expense. Allowances for excess and obsolescence for expendable parts expected to be on hand at the date aircraft are retired from service are provided over the estimated useful lives of the related airframes and engines. These allowances are based on management estimates, which are subject to change as conditions in the business evolve. The net book value of expendable parts inventory was \$48.3 million as of December 31, 2019 and \$49.4 million at December 31, 2018, net of allowances for obsolescence of \$30.4 million at December 31, 2019 and \$33.0 million at December 31, 2018.

Property and Equipment

We record property and equipment at cost and depreciate these assets to their estimated residual values on a straight-line basis over their estimated useful lives or average remaining fleet lives. We review these assumptions at least annually and adjust depreciation on a prospective basis. Expenditures for major additions, improvements and flight equipment modifications are generally capitalized and depreciated over the shorter of the estimated life of the improvement, the modified assets' remaining life or remaining lease term. Most of our flight equipment is specifically pledged as collateral for our indebtedness.

The estimated useful lives of our property and equipment are as follows:

	<u>Range</u>
Flight equipment	30 to 40 years
Computer software and equipment	3 to 5 years
Ground handling equipment and other.....	3 to 10 years

Depreciation expense related to property and equipment was \$220.2 million in 2019, \$196.6 million in 2018 and \$153.1 million in 2017.

The net book value of flight equipment on dry lease to customers was \$1,465.1 million as of December 31, 2019 and \$1,717.5 million as of December 31, 2018. The accumulated depreciation for flight equipment on dry lease to customers was \$260.4 million as of December 31, 2019 and \$232.4 million as of December 31, 2018.

Rotable parts are recorded in Property and equipment, net, and are depreciated over their average remaining fleet lives and written off when they are determined to be beyond economic repair. The net book value of rotable parts inventory was \$244.8 million as of December 31, 2019 and \$240.7 million as of December 31, 2018.

During the fourth quarter of 2019, we recorded an impairment charge of \$33.6 million to write down certain rotable parts related to our 747-400 freighter fleet. See Note 5 for further discussion.

Capitalized Interest

Interest on funds used to finance the acquisition of flight equipment up to the date the asset is ready for its intended use is capitalized and included in the cost of the asset. Included in capitalized interest is the interest paid on the purchase deposit borrowings directly associated with the acquisition of flight equipment. The remainder of capitalized interest recorded on the acquisition of flight equipment is determined by taking the weighted average cost of funds associated with our other debt and applying it against the amounts paid for flight equipment modifications and purchase deposits.

Goodwill

Goodwill represents the excess of an acquisition's purchase price over the fair value of the identifiable net assets acquired and liabilities assumed. Goodwill is not amortized, but tested for impairment annually during the fourth quarter of each year, or more frequently if certain events or circumstances indicate that an impairment loss may have been incurred. Our goodwill is not deductible for tax purposes.

We may elect to perform a qualitative analysis on the reporting unit that has goodwill to determine whether it is more likely than not that fair value of the reporting unit is less than its carrying value. If the qualitative analysis indicates that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, or if we elect not to perform a qualitative analysis, we perform a quantitative analysis to determine whether a goodwill impairment exists. If the fair value of the reporting unit is less than the carrying amount, the difference is written off as an impairment up to the carrying amount of goodwill.

Fair value is determined using a discounted cash flow analysis based on key assumptions including, but not limited to, (i) a projection of revenues, expenses and other cash flows; (ii) terminal period earnings; and (iii) an assumed discount rate.

The total amount of goodwill was \$40.4 million, which is included in Intangible assets, net and goodwill in the consolidated balance sheets as of December 31, 2019 and 2018 (see Note 6). During the fourth quarter of 2019, we performed a quantitative analysis and determined that goodwill was not impaired.

Impairment of Long-Lived Assets

We record impairment charges for long-lived assets when events and circumstances indicate that the assets may be impaired, the undiscounted cash flows estimated to be generated by those assets are less than the associated carrying amount and the net book value of the assets exceeds the associated estimated fair value.

For flight equipment, operating lease right-of-use assets and finite-lived intangibles used in our ACMI and Charter segments, assets are grouped at the operating fleet level for impairment testing. For flight equipment and finite-lived intangibles used in our Dry Leasing segment, assets are assessed at the individual aircraft or engine level for impairment testing.

For assets classified as held for sale, an impairment charge is recognized when the estimated fair value less the cost to sell the asset is less than its carrying amount.

In developing estimates for flight equipment, operating lease right-of-use assets, and cash flows and our incremental borrowing rate, we use external appraisals, adjusted for maintenance condition, as necessary; bids received from independent third parties; industry data; anticipated utilization of the assets, revenue generated, associated costs, length of service and estimated residual values. See Note 5 for a discussion of impairment charges in 2019.

Variable Interest Entities and Off-Balance Sheet Arrangements

Dry Leasing Joint Venture

We hold a 10% interest in a joint venture with an unrelated third party, which we entered into in December 2019, to develop a diversified freighter aircraft dry leasing portfolio. Through Titan, we provide aircraft- and lease-management services to the joint venture for fees based upon aircraft assets under management, among other things. Our investment in the joint venture is accounted for under the equity method of accounting. Under the joint venture, we have a commitment to provide of up to \$40.0 million of capital contributions before December 2022. Our investment in the joint venture was \$1.5 million as of December 31, 2019 and our maximum exposure to losses from the entity is limited to our investment. The joint venture does not currently have any third-party debt obligations and no capital contributions have been made as of December 31, 2019.

Parts Joint Venture

We hold a 50% interest in a joint venture with an unrelated third party to purchase rotatable parts and provide repair services for those parts, primarily for 747-8F aircraft. The joint venture is a variable interest entity and we have not consolidated the joint venture because we are not the primary beneficiary as we do not exercise financial control. Our investment was \$20.0 million as of December 31, 2019 and \$22.3 million as of December 31, 2018 and our maximum exposure to losses from the entity is limited to our investment, which is composed primarily of rotatable inventory parts. The joint venture does not have any third-party debt obligations. We had Accounts payable to the joint venture of \$0.5 million as of December 31, 2019 and 2018.

EETCs

A portion of our operating aircraft are owned or effectively owned and leased through trusts established specifically to purchase, finance and lease aircraft to us. In three separate transactions, we issued enhanced equipment trust certificates (“EETCs”) to finance the acquisition of five 747-400F aircraft as leveraged leases. In a leveraged lease, the owner trustee is the owner of record for the aircraft. Wells Fargo Bank Northwest, National Association (“Wells Fargo”) serves as the owner trustee with respect to the leveraged leases in each of our EETC transactions. As the owner trustee of the aircraft, Wells Fargo serves as the lessor of the aircraft under the EETC lease between us and the owner trustee. Wells Fargo also serves as trustee for the beneficial owner of the aircraft, the owner participant. The original owner participant for each aircraft invested (on an equity basis) approximately 20% of the original cost of the aircraft. The remaining approximately 80% of the aircraft cost was financed with debt issued by the owner trustee on a nonrecourse basis in the form of equipment notes.

The equipment notes were generally issued in three series, for each aircraft, designated as Series A, B and C equipment notes. The loans evidenced by the equipment notes were funded by the public offering of EETCs. Like the equipment notes, the EETCs were issued in three series, with each EETC transaction designated as Series A, B and C EETCs. Each series of EETCs was issued by the trustee for separate Atlas pass-through trusts with the same designation as the series of EETCs issued (“PTCs”). Each of these pass-through trustees is also the holder and beneficial owner of the equipment notes bearing the same series designation.

These leasing entities meet the criteria for variable interest entities. We have not consolidated any of the aircraft-leasing trusts because we are not the primary beneficiary. We account for these leases as operating leases, see Note 9 for further discussion.

Discontinued Operations

On April 7, 2016, we completed the acquisition of Southern Air and its subsidiaries, including Southern Air Inc. and Florida West International Airways, Inc. (“Florida West”). As part of integrating Southern Air, management decided and committed to pursue a plan to sell Florida West. As a result, the financial results for Florida West are presented as a discontinued operation. In February 2017, management determined that a sale of Florida West was no longer likely to occur and committed to a plan to wind down its operations. The wind-down of operations was completed in March 2017.

Income Taxes

Deferred income taxes are recognized for the tax consequences of reporting items in our income tax returns at different times than the items are reflected in our financial statements. These temporary differences result in deferred tax assets and liabilities that are calculated by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities. If necessary, deferred income tax assets are reduced by a valuation allowance to an amount that is determined to be more likely than not recoverable. We must make significant estimates and assumptions about future taxable income and future tax consequences when determining the amount, if any, of the valuation allowance.

We have recorded reserves for income taxes that may become payable in future years. Although management believes that its positions taken on income tax matters are reasonable, we have nevertheless established tax reserves in recognition that various taxing authorities may challenge certain of the positions taken by us, potentially resulting in additional liabilities for taxes.

Heavy Maintenance

Except for engines used on our 747-8F aircraft, we account for heavy maintenance costs for airframes and engines used in our ACMI and Charter segments using the direct expense method. Under this method, heavy maintenance costs are charged to expense upon induction, based on our best estimate of the costs after considering multiple factors, including historical costs, experience and information provided by third-party maintenance providers. These estimates may be subsequently adjusted for changes and the final determination of actual costs incurred.

We account for heavy maintenance costs for airframes and engines used in our Dry Leasing segment and engines used on our 747-8F aircraft using the deferral method. Under this method, we defer the expense recognition of scheduled heavy maintenance events, which are amortized over the estimated period until the next scheduled heavy maintenance event is required. Amortization of deferred maintenance expense is included in Depreciation and amortization. The following table provides a summary of Deferred maintenance included within Deferred costs and other assets as of December 31:

	<u>2019</u>	<u>2018</u>
Beginning balance, net	\$ 103,647	\$ 63,868
Deferred maintenance costs	113,076	53,343
Disposals	(10,450)	-
Amortization of deferred maintenance	(21,994)	(13,564)
Ending balance, net	<u>\$ 184,279</u>	<u>\$ 103,647</u>

Prepaid Maintenance Deposits

Certain of our aircraft financing agreements require security deposits to our finance providers to ensure that we perform major maintenance as required. These are substantially refundable to us and are accounted for as deposits and included in Prepaid maintenance and in Deferred costs and other assets. Such amounts were \$2.2 million as of December 31, 2019 and \$3.2 million at December 31, 2018.

Foreign Currency

While most of our revenues are denominated in U.S. dollars, our results of operations may be exposed to the effect of fluctuations in the U.S. dollar value of foreign currency-denominated operating revenues and expenses. Gains or losses resulting from foreign currency transactions are included within Non-operating Expense (Income).

Stock-Based Compensation

We have various stock-based compensation plans for certain employees and outside directors, which are described more fully in Note 14. We recognize compensation expense, net of estimated forfeitures, on a straight-line basis over the vesting period for each award based on the fair value on grant date. We estimate restricted stock unit forfeitures at the time of grant and periodically revise those estimates in subsequent periods if actual forfeitures differ from those estimates. As a result, we record stock-based compensation expense only for those awards that are expected to vest.

Liquidity

During the year ended December 31, 2019, our earnings and cash flows were impacted by macroeconomic conditions affecting the global airfreight market, including tariffs and global trade tensions and geopolitical unrest in certain countries in South America, as well as labor-related service disruptions. Our ability to continue to service our debt and meet our lease and other obligations as they come due is dependent on our continued ability to generate earnings and cash flows. We have implemented certain initiatives, including cost savings and the sale of certain nonessential assets, to mitigate the impact of any continuation or worsening of the aforementioned factors, including the potential impact of the recent coronavirus disruptions. If we are unable to implement these or additional initiatives, it could have a material adverse effect on our financial position, results of operations, and cash flows. As discussed in Note 8, in February 2020, we refinanced two term loans that had payments of \$126.2 million due in 2020, included in Current portion of long-term debt and finance leases as of December 31, 2019. We believe the Company will generate sufficient liquidity to satisfy its obligations over the next twelve months.

Recent Accounting Pronouncements Adopted in 2019

In January 2017, the Financial Accounting Standards Board (“FASB”) amended its accounting guidance for goodwill impairment. The guidance eliminates the requirement to calculate the implied fair value of goodwill to measure an impairment charge. Instead, entities will record an impairment charge based on the excess of a reporting unit’s carrying amount over its fair value. The amended guidance is effective for fiscal years beginning after December 15, 2019, with early adoption permitted. We early adopted the new guidance effective as of January 1, 2019. The adoption of this guidance did not have any impact on our consolidated financial statements.

In February 2016, the FASB amended its accounting guidance for leases. Subsequently, the FASB issued several clarifications and updates. The guidance requires a lessee to recognize assets and liabilities on the balance sheet arising from leases with terms greater than 12 months. While lessor accounting guidance is relatively unchanged, certain amendments were made to conform with changes made to lessee accounting and the amended revenue recognition guidance. The new guidance continues to classify leases as either finance or operating, with classification affecting the presentation and pattern of expense and income recognition, in the statement of operations. It also requires additional quantitative and qualitative disclosures about leasing arrangements. We adopted the new guidance on January 1, 2019 using the modified retrospective approach, which was applied beginning on the adoption date. Comparative information has not been restated and continues to be reported under the accounting guidance in effect for those periods. The adoption did not have a material effect on our consolidated statements of operations or cash flows. We recognized operating lease right-of-use assets, net of pre-existing deferred rent and operating lease intangibles, and operating lease liabilities on our consolidated balance sheets of approximately \$596.9 million and \$650.0 million, respectively, on the adoption date (see Note 9).

Recent Accounting Pronouncements Not Yet Adopted

In November 2019, the FASB amended its accounting guidance for share-based payment awards issued to a customer. The guidance requires share-based payment awards issued to a customer to be recorded as a reduction of the transaction price in revenue based on the fair value at grant date and to be classified on the balance sheet using accounting guidance for stock-based compensation. The amended guidance is effective for fiscal years beginning after December 15, 2019. Effective January 1, 2020, we are adopting the amended guidance and applying the modified retrospective approach to the most current period presented. While we are still assessing the impact the amended guidance will have on our financial statements, we expect approximately \$14 million or 60% of our customer warrant liability of \$24 million related to revenue contracts, which is included in Financial instruments and other liabilities as of December 31, 2019, will be reclassified as Additional paid-in-capital within Total stockholders' equity on January 1, 2020. As a result, these customer warrants will no longer be marked-to-market at the end of each reporting period with changes in fair value recorded as an unrealized (gain) loss on financial instruments. The amended guidance will not impact the accounting for the remaining portion of our customer warrant liability related to Dry Lease contracts, which was approximately \$10 million or 40% of the total customer warrant liability as of December 31, 2019. The new guidance will not impact how we account for the amortization of the customer incentive asset.

3. DHL Investment and Polar

DHL Network Operations (USA), Inc. ("DHL"), a subsidiary of Deutsche Post AG ("DP"), holds a 49% equity interest and a 25% voting interest in Polar. Polar is a variable interest entity and we do not consolidate Polar because we are not the primary beneficiary as the risks associated with the direct costs of operation are with DHL. Under a 20-year blocked space agreement, which began in 2008 (the "BSA"), Polar provides air cargo capacity to DHL. Atlas and Polar also have a flight services agreement, whereby Atlas is compensated by Polar on a per Block Hour basis, subject to a monthly minimum Block Hour guarantee, at a predetermined rate with the opportunity for performance premiums that escalate annually. Under the flight services agreement, Atlas provides Polar with crew, maintenance and insurance for the aircraft. Under other separate agreements, we provide aircraft to Polar, and Atlas and Polar supply administrative, sales and ground support services to one another. DP has guaranteed DHL's (and Polar's) obligations under the various transaction agreements described above. AAWW has agreed to indemnify DHL for and against various obligations of Polar and its affiliates. Collectively, these agreements are referred to herein as the "DHL Agreements". The DHL Agreements provide us with a minimum guaranteed revenue stream from aircraft that have been dedicated to Polar for DHL and other customers' freight over the life of the agreements. DHL provides financial support and also assumes the risks and rewards of the operations of Polar.

In accordance with the DHL Agreements, Polar flies for DHL's transpacific express network and DHL provides financial support and assumes the risks and rewards of the operations of Polar. In addition to transpacific routes, Polar also flies between the Asia Pacific region, the Middle East and Europe on behalf of DHL and other customers.

The BSA established DHL's capacity purchase commitments on Polar flights. The BSA gives DHL the option to terminate the agreements for convenience by giving us a one-year notice on or before October 27, 2022, which would be effective on October 23, 2023. Either party may terminate for cause (as defined) at any time. With respect to DHL, "cause" includes Polar's inability to meet certain departure and arrival criteria for an extended period of time and upon certain change-of-control events, in which case DHL may be entitled to liquidated damages from Polar. Except for any liquidated damages that we could incur as described above, we do not have any continuing financial exposure to fund debt obligations or operating losses of Polar.

Combined with Polar, we provide ACMI, CMI, Charter and Dry Leasing services to support DHL's transpacific express, North American, intra-Asian, and global networks. In addition, we fly between the Asia Pacific region, the Middle East and Europe on behalf of DHL and other customers. Atlas also provides incremental charter capacity to Polar and DHL from time to time.

The following table summarizes the aircraft types, services and number of aircraft provided to Polar and DHL as of December 31, 2019:

Aircraft	Service	Total
747-8F	ACMI	6
747-400F	ACMI	5
777-200LRF	CMI	6
777-200LRF	CMI and Dry Leasing	2
767-300	CMI and Dry Leasing	2
767-300	CMI	2
767-200	CMI	9
737-400F	CMI	5
757-200F	Dry Leasing	1
Total		38

The following table summarizes our transactions with Polar:

	For the Years Ended December 31,		
	2019	2018	2017
Revenue and Expenses:			
Revenue from Polar	\$ 374,236	\$ 412,793	\$ 420,564
Ground handling and airport fees to Polar	2,202	2,301	2,746
Accounts receivable/payable as of:	December 31, 2019	December 31, 2018	
Receivables from Polar	10,855	16,349	
Payables to Polar	2,161	2,527	
Aggregate Carrying Value of Polar Investment as of:	December 31, 2019	December 31, 2018	
Aggregate Carrying Value of Polar Investment	\$ 4,870	\$ 4,870	

In addition to the amounts in the table above, Atlas recognized revenue of \$101.3 million in 2019, \$106.9 million in 2018, and \$33.5 million in 2017 from flying on behalf of Polar.

4. Supplemental Balance Sheet and Cash Flow Information

Accounts Receivable

Accounts receivable, net of allowances related to customer contracts, excluding Dry Leasing contracts, was \$247.5 million as of December 31, 2019 and \$227.1 million as of December 31, 2018.

Accrued Liabilities

Accrued liabilities consisted of the following as of December 31:

	2019	2018
Maintenance	\$ 136,315	\$ 133,337
Customer maintenance reserves	110,355	104,454
Salaries, wages and benefits	75,719	82,809
Aircraft fuel	28,821	32,641
Deferred revenue	26,357	26,584
Other	104,158	85,844
Accrued liabilities	\$ 481,725	\$ 465,669

Revenue Contract Liability

Deferred revenue for customer contracts, excluding Dry Leasing contracts, represents amounts collected from, or invoiced to, customers in advance of revenue recognition. The balance of Deferred revenue will increase or decrease based on the timing of invoices and recognition of revenue.

Significant changes in our Deferred Revenue liability balances during the year ended December 31, 2019 were as follows:

	Deferred Revenue
Balance as of December 31, 2018.....	\$ 13,007
Revenue recognized.....	(172,119)
Amounts collected or invoiced	178,346
Balance as of December 31, 2019.....	<u>\$ 19,234</u>

Supplemental Cash Flow Information

Cash interest paid to lenders is calculated on the face amount of our various debt instruments based on the contractual interest rates in effect during each payment period.

The following table summarizes interest and income taxes paid:

	2019	2018	2017
Interest paid.....	\$ 88,788	\$ 86,168	\$ 73,872
Income taxes paid, net of refunds	\$ (1,715)	\$ 695	\$ 563

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the consolidated balance sheets that sum to the total shown in the consolidated statements of cash flows:

	2019	2018
Cash and cash equivalents	\$ 103,029	\$ 221,501
Restricted cash.....	10,401	11,240
Total Cash, cash equivalents and restricted cash shown in Consolidated Statements of Cash Flows	<u>\$ 113,430</u>	<u>\$ 232,741</u>

5. Special Charge and Other Income

The impact of the global airfreight environment and macroeconomic conditions, including tariffs, global trade tensions and geopolitical unrest in certain countries in South America, especially during the fourth quarter, resulted in lower 747-400 commercial cargo yields and aircraft utilization. As a result, we concluded in November 2019 that the 747-400 freighter fleet may be impaired and performed an impairment test.

Our reviews of all other asset groups, which includes the remainder of our flight equipment, did not identify any indicators of impairment. Despite the conditions described above that impacted our 747-400 freighter fleet used in our ACMI and Charter segments, demand remained strong and often increased for our other freighter fleet types used in those segments. These include 747-8F, 777-200LRF and 767-300 freighter aircraft, which are used primarily to provide ACMI and CMI services for express and e-commerce customers.

For impairment testing, we view the 747-400 freighter fleet, as well as the related engines, operating lease right-of-use assets, rotatable parts, and other related equipment as one asset group. The undiscounted cash flows estimated to be generated by those assets were less than the aggregate carrying value. Therefore, we concluded that the carrying amount was no longer recoverable. Consequently, during the fourth quarter of 2019, we recorded an impairment charge of \$580.3 million to write down the 747-400 freighter asset group to its estimated fair value, which is included in Special charge included in Total operating expenses in the consolidated statements of operations.

In determining fair value, we obtained appraisals or bids from independent third parties for these assets, which considered the effects of the current market environment, age of the assets, and marketability. For rotatable parts, the appraisals considered the maintenance condition of the parts. For our owned 747-400 freighter aircraft and spare engines, we made adjustments to the appraisals to reflect the impact of their current maintenance condition to determine fair value. Our estimate of fair value was not based on distressed sales or forced liquidations. The fair value for operating lease right-of-use assets was based on the present value of current market fixed lease rates utilizing our incremental borrowing rate for the remaining term of each lease. Since the fair value was determined using unobservable inputs, the asset group was classified as Level 3 under the fair value hierarchy in November 2019 (see Note 11).

During 2019, we also incurred impairment charges related to the write-down of certain CF6-80 engines in our Dry Leasing portfolio that were sold. In addition, we incurred impairment charges related to two 737-400 passenger aircraft previously used for training purposes, certain spare CF6-80 engines that were written down as part of the 747-400 freighter fleet discussed above and three aircraft in our Dry Leasing portfolio, which are all classified as held for sale as of December 31, 2019. Depreciation ceased on the assets when they were classified as held for sale. We estimated the fair value of these assets, less costs to sell, based on bids received from independent third parties. The carrying value of the assets held for sale as of December 31, 2019 was \$155.9 million which was included within Prepaid expense, held for sale and other current assets in the consolidated balance sheets. These assets are classified as Level 3 under the fair value hierarchy as of December 31, 2019. In February 2020, we received \$12.4 million in proceeds from the sale of one aircraft that was completed. Sale of the remaining aircraft and engines held for sale are expected to be completed in 2020.

The following table summarizes the Special charge included in Total operating expenses in the consolidated statements of operations for the year ended December 31, 2019:

Impairment of 747-400 freighter aircraft and related assets.....	\$	580,279
Impairment of assets sold, held for sale and other		58,094
Special charge.....	\$	<u>638,373</u>

During 2018, we recognized \$9.4 million of impairment in Special charge for the write down of CF6-80 engines that were traded in as part of our engine acquisition program and had been classified as held for sale. Depreciation ceased on the engines when they were classified as held for sale. All of the engines were traded in as of December 31, 2018.

During 2019 and 2018, we recognized refunds of \$27.6 million and \$12.4 million, respectively, related to aircraft rent paid in previous years within Other (income) expense, net.

6. Intangible Assets, Net and Goodwill

The following table presents our Intangible assets, net and goodwill as of December 31:

	<u>2019</u>	<u>2018</u>
Lease intangible.....	\$ 54,891	\$ 54,891
Goodwill.....	40,361	40,361
Customer relationship	26,280	26,280
Fair value adjustments on leases	—	45,531
Less: accumulated amortization	<u>(44,676)</u>	<u>(69,374)</u>
	<u>\$ 76,856</u>	<u>\$ 97,689</u>

Lease intangibles resulted from the acquisition of various aircraft with in-place Dry Leases to customers on a long-term basis and are amortized on a straight-line basis over the life of the leases. Goodwill is primarily attributable to our acquisition of Southern Air in 2016. Customer relationship represents Southern Air's underlying relationship and agreements with DHL. Fair value adjustments on operating leases represented the capitalized discount recorded in prior years to adjust the lease commitments for our 747-400 aircraft to fair market value and were amortized on a straight-line basis over the life of the leases. Subsequent to the adoption of the new lease

accounting guidance on January 1, 2019, fair value adjustments related to operating leases are included in Operating lease right-of-use assets (see Note 9).

Amortization expense related to intangible assets amounted to \$6.2 million in 2019, \$8.8 million in 2018 and \$9.5 million in 2017.

The estimated future amortization expense of intangible assets as of December 31, 2019 is as follows:

2020	\$	6,030
2021		6,030
2022		6,030
2023		4,853
2024		1,643
Thereafter.....		11,909
Total	\$	<u>36,495</u>

7. Amazon

In May 2016, we entered into certain agreements with Amazon.com, Inc. and its subsidiary, Amazon Fulfillment Services, Inc., (collectively “Amazon”), which involve, among other things, CMI operation of 20 Boeing 767-300 freighter aircraft for Amazon by Atlas, as well as Dry Leasing by Titan. The Dry Leases have a term of ten years from the commencement of each agreement, while the CMI operations are for seven years from the commencement of each agreement (with an option for Amazon to extend the term to a total of ten years). Between August 2016 and November 2018, we placed all 20 freighter aircraft into service for Amazon. In February 2019, the number of 767-300 freighters in CMI and Dry Lease service for Amazon was reduced to 19 with the loss of an aircraft. In September 2019, the number of 767-300 freighters in CMI service for Amazon was reduced to 17 with the early termination of CMI services for two aircraft, which remain under dry lease.

In conjunction with the agreements entered into in May 2016, we granted Amazon a warrant providing the right to acquire up to 20% of our outstanding common shares, after giving effect to the issuance of shares pursuant to the warrants, at an exercise price of \$37.50 per share (“Warrant A”). As of December 31, 2019, this warrant to purchase 7.5 million shares had vested in full. Warrant A is exercisable in accordance with its terms through 2021. As of December 31, 2019, no portion of Warrant A has been exercised.

The agreements entered into in May 2016 also provided incentives for future growth of the relationship as Amazon may increase its business with us. In that regard, we granted Amazon a warrant to acquire up to an additional 10% of our outstanding common shares, after giving effect to the issuance of shares pursuant to the warrants, for an exercise price of \$37.50 per share (“Warrant B”). This warrant to purchase 3.75 million shares will vest in increments of 37,500 shares each time Amazon has paid \$4.2 million of revenue to us, up to a total of \$420.0 million, for incremental business beyond the original 20 767-300 freighters. As of December 31, 2019, 75,000 shares of Warrant B have vested. Upon vesting, Warrant B becomes exercisable in accordance with its terms through May 2023.

In March 2019, we amended the agreements entered into in 2016 with Amazon, pursuant to which we will provide CMI services using Boeing 737-800 freighter aircraft provided by Amazon. The 737-800 CMI operations will be for a term of seven years from the commencement of each agreement (with an option for Amazon to extend the term to ten years). As of December 31, 2019, five 737-800 freighter aircraft entered CMI service. Amazon may, in its sole discretion, place up to 15 additional 737-800 freighter aircraft into service with us by May 31, 2021.

In connection with the amended agreements, we granted Amazon a warrant to acquire up to an additional 9.9% of our outstanding common shares, after giving effect to the issuance of shares pursuant to the warrants, for an exercise price of \$52.90 per share (“Warrant C”). When combined with Warrant A and Warrant B, this would allow Amazon to acquire up to a total of 39.9% (after the issuance) of our outstanding common shares and Amazon would be entitled to vote the shares it owns up to 14.9% of our outstanding common shares, in its discretion. Amazon would be required to vote any shares it owns in excess of 14.9% of our outstanding common shares in accordance

with the recommendation of our board of directors. After Warrant B has vested in full, this warrant to purchase 6.6 million shares would vest in increments of 45,428 shares each time Amazon has paid \$6.9 million of revenue to us, up to a total of \$1.0 billion, for incremental business beyond Warrant A and Warrant B. As of December 31, 2019, no portion of Warrant C has vested. Upon vesting, Warrant C would become exercisable in accordance with its terms through March 2026.

At the time of vesting, the fair value of the vested portion of the warrants issued to Amazon is recorded as a warrant liability within Financial instruments and other liabilities (the “Amazon Warrant”). The initial fair value of the vested portion of Warrant A was recognized as a customer incentive asset within Deferred costs and other assets, net and is amortized as a reduction of Operating Revenue in proportion to the amount of revenue recognized over the terms of the Dry Leases and CMI agreements. Determining the amount of amortization related to the CMI agreements requires significant judgment to estimate the total number of Block Hours expected over the terms of those agreements.

When it becomes probable that an increment of either Warrant B or C will vest and the related revenue begins to be recognized, the fair value of such portion is recorded as Additional paid-in-capital. The initial fair value of such increment is also recognized as a customer incentive asset within Deferred costs and other assets, net and is amortized as a reduction of Operating Revenue in proportion to the amount of related revenue recognized. At the time of vesting, the amount recorded in Additional paid-in-capital would be reclassified to the Amazon Warrant liability.

We amortized \$33.1 million and \$16.2 million of the customer incentive asset for 2019 and 2018, respectively. Amortization of the customer incentive asset in 2019 included \$6.4 million of accelerated amortization related to a 767-300 aircraft that is no longer in CMI service.

Customer incentive asset included within Deferred costs and other assets is as follows:

	2019	2018
Beginning balance	\$ 184,720	\$ 106,538
Initial value for vested portion of warrant	949	94,359
Amortization of customer incentive asset	(33,135)	(16,177)
Ending balance	<u>\$ 152,534</u>	<u>\$ 184,720</u>

The Amazon Warrant liability is marked-to-market at the end of each reporting period with changes in fair value recorded in Unrealized (gain) loss on financial instruments. We utilize a Monte Carlo simulation approach to estimate the fair value of the Amazon Warrant which requires inputs such as our common stock price, the warrant strike price, estimated common stock price volatility and risk-free interest rate, among others. We recognized net unrealized gains of \$75.1 million in 2019, and \$123.1 million in 2018 and a net unrealized loss of \$12.5 million in 2017 on the Amazon Warrant. The fair value of the Amazon Warrant liability was \$24.3 million as of December 31, 2019 and \$99.0 million as of December 31, 2018.

8. Debt

Our debt obligations, as of December 31:

	Range of Maturity Dates	2019		2018	
		Interest Rates (1)	Balance	Interest Rates (1)	Balance
Ex-Im Guaranteed Notes.....	2021 to 2025	1.90%	\$ 396,632	1.89%	\$ 481,226
Term loans.....	2020 to 2028	4.13%	1,319,754	4.18%	1,443,947
Private Placement Facility	2025 to 2026	3.26%	113,997	3.21%	129,482
Convertible Notes	2022 to 2024	2.04%	513,500	2.04%	513,500
Revolving Credit Facility	2022	3.54%	100,000	-	-
EETC.....	2019	-	-	7.52%	2,158
Total principal amount of debt.....			2,443,883		2,570,313
Less: unamortized debt discount and issuance costs			(103,711)		(131,475)
Total debt			2,340,172		2,438,838
Less current portion of debt			(384,895)		(264,835)
Long-term debt.....			<u>\$1,955,277</u>		<u>\$2,174,003</u>

(1) Interest rates reflect weighted-average rates as of year-end.

Many of our financing instruments have cross-default provisions and contain limitations on our ability to, among other things, consummate certain asset sales, merge or consolidate with any other person or sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of our assets.

Description of our Debt Obligations

Ex-Im Guaranteed Notes

We have issued various notes guaranteed by the Export-Import Bank of the United States (“Ex-Im Bank”), each secured by a mortgage on a 747-8F or 777-200LRF aircraft (the “Ex-Im Guaranteed Notes”). In connection with the issuance of Ex-Im Guaranteed Notes, we paid usual and customary commitment and other fees associated with this type of financing. In addition, there are customary covenants, events of default and certain operating conditions that we must meet for the Ex-Im Guaranteed Notes. These notes accrue interest at a fixed rate with principal and interest payable quarterly.

Term Loans

We have entered into various term loans to finance the purchase of aircraft, passenger-to-freighter conversion of aircraft, and for GENx engine performance upgrade kits and overhauls. Each term loan requires payment of principal and interest quarterly in arrears, and certain term loans require lump-sum principal payments at maturity. Funds drawn under each term loan are subject to usual and customary fees, and funds drawn typically bear interest at a fixed rate based on LIBOR, plus a margin. Each facility is guaranteed by us and subject to customary covenants and events of default.

The following table summarizes the terms for each term loan entered into during 2019 (in millions):

	Issue Date	Face Value	Collateral Type	Original Term	Fixed Interest Rate
First 2019 Term Loan	March 2019	\$ 19.7	None	60 months	2.73%
Second 2019 Term Loan.....	August 2019	74.0	Genx engines	60 months	2.98%
Third 2019 Term Loan.....	November 2019	22.3	None	60 months	2.10%
Total		<u>\$ 116.0</u>			

In March 2019, we received \$41.1 million in proceeds from insurance related to the loss of a 767-300 freighter aircraft and used \$20.7 million of the proceeds to repay two term loans related to the aircraft. In connection with the

repayment, we recognized a \$0.2 million loss on early of extinguishment of debt. During 2019, we also recognized a net insurance recovery of \$3.6 million resulting from the excess of insurance proceeds over the carrying amount of the aircraft and other related costs within Other (income) expense, net.

In August 2019, we refinanced a higher-rate term loan with the Second 2019 Term Loan and recognized a \$0.6 million loss on early extinguishment of debt.

Private Placement Facility

In September 2017, we entered into a debt facility for a total of \$145.8 million through private placement to finance the purchase and passenger-to-freighter conversion of six 767-300 freighter aircraft dry leased to a customer (the “Private Placement Facility”). The Private Placement Facility consists of six separate loans (the “Private Placement Loans”). Each Private Placement Loan is comprised of an equipment note and an equipment term loan, both secured by the cash flows from a 767-300 freighter aircraft dry lease and the underlying aircraft. The equipment notes require payment of principal and interest at a fixed interest rate. The equipment term loans accrue interest, at a fixed rate, which is added to the principal balance outstanding until each equipment note is paid in full. Subsequently, the equipment term loans require payment of principal and interest over the remaining term of the loans. The Private Placement Loans are cross-collateralized, but not cross-defaulted, with each other and, except for certain specified events, are not cross-defaulted with other debt facilities of the Company.

In connection with entry into the Private Placement Facility, we have agreed to pay usual and customary commitment and other fees associated with this type of financing. The Private Placement Facility is guaranteed by us and subject to customary covenants and events of default.

Convertible Notes

In May 2017, we issued \$289.0 million aggregate principal amount of convertible senior notes that mature on June 1, 2024 (the “2017 Convertible Notes”) in an underwritten public offering. In June 2015, we issued \$224.5 million aggregate principal amount of convertible senior notes that mature on June 1, 2022 (the “2015 Convertible Notes”) in an underwritten public offering. The 2017 Convertible Notes and the 2015 Convertible Notes (collectively, the “Convertible Notes”) are senior unsecured obligations and accrue interest payable semiannually on June 1 and December 1 of each year. The Convertible Notes are due on their respective maturity dates, unless earlier converted or repurchased pursuant to their respective terms.

The following table lists certain key terms for the Convertible Notes:

	2017	2015
	Convertible Note	Convertible Note
Fixed interest rate.....	1.88%	2.25%
Earliest conversion date	September 1, 2023	September 1, 2021
Initial conversion price per share.....	\$ 61.08	\$ 74.05
Conversion rate (shares for each \$1,000 of principal).....	16.3713	13.5036

During 2017, we used the majority of the net proceeds from the 2017 Convertible Notes to repay \$150.0 million then outstanding under our revolving credit facility and to fund the cost of the convertible note hedges described below.

During 2015, we used the majority of the proceeds from the 2015 Convertible Notes to refinance higher-rate equipment notes funded by EETCs related to five 747-400 freighter aircraft owned by us in the aggregate amount of \$187.8 million. The EETCs had an average cash coupon of 8.1%.

The Convertible Notes will initially be convertible into shares of our common stock based on the respective conversion rates, which are equal to the respective initial conversion prices per share. The conversion rates will be subject to adjustment upon the occurrence of certain specified events but will not be adjusted for accrued and unpaid interest, except in certain limited circumstances. Upon the occurrence of a “make-whole fundamental change,” we will, in certain circumstances, increase the conversion rates by a number of additional shares of our common stock for the Convertible Notes converted in connection with such “make-whole fundamental change”. Additionally, if

we undergo a “fundamental change,” holders will have the option to require us to repurchase all or a portion of their Convertible Notes for cash at a price equal to 100% of the principal amount of the Convertible Notes being repurchased plus any accrued and unpaid interest through, but excluding, the fundamental change repurchase date.

In connection with the offerings of the Convertible Notes, we entered into convertible note hedge transactions whereby we have the option to purchase a certain number of shares of our common stock at a fixed price per share. In addition, we sold warrants to the option counterparties whereby the holders of the warrants have the option to purchase a certain number of shares of our common stock at a fixed price per share.

The following table summarizes the convertible note hedges and related warrants:

	2017		2015
	Convertible Note		Convertible Note
Convertible Note Hedges:			
Number of shares ⁽¹⁾	4,731,306		3,031,558
Initial price per share	\$ 61.08	\$	74.05
Cost of hedge	\$ 70,140	\$	52,903
Convertible Note Warrants:			
Number of shares ⁽¹⁾	4,731,306		3,031,558
Initial price per share	\$ 92.20	\$	95.01
Proceeds from sale of warrants.....	\$ 38,148	\$	36,290

⁽¹⁾ Subject to adjustment for certain specified events

Taken together, the purchases of the convertible note hedges and the sales of the warrants are intended to offset any economic dilution from the conversion of each of the Convertible Notes when the stock price is below the exercise price of the respective warrants and to effectively increase the overall conversion prices from \$61.08 to \$92.20 per share for the 2017 Convertible Notes and from \$74.05 to \$95.01 per share for the 2015 Convertible Notes. However, for purposes of the computation of diluted earnings per share in accordance with GAAP, dilution typically occurs when the average share price of our common stock for a given period exceeds the conversion price. The net cost incurred in connection with the convertible note hedges and warrants was recorded as a reduction to additional paid-in capital, net of tax, in the consolidated balance sheets.

On or after the earliest conversion date until the close of business on the second scheduled trading day immediately preceding the maturity date, a holder may convert all or a portion of its Convertible Notes. Upon conversion, each of the Convertible Notes will be settled, at our election, in cash, shares of our common stock, or a combination of cash and shares of our common stock. Our current intent and policy is to settle conversions with a combination of cash and shares of common stock with the principal amounts of the Convertible Notes paid in cash.

Holders may only convert their Convertible Notes at their option at any time prior to the earliest conversion dates, under the following circumstances:

- during any calendar quarter (and only during such calendar quarter) if, for each of at least 20 trading days (whether or not consecutive) during the 30 consecutive trading day period ending on, and including, the last trading day of the immediately preceding calendar quarter, the last reported sale price of our common stock for such trading day is equal to or greater than 130% of the conversion price on such trading day;
- during the five consecutive business day period immediately following any five consecutive trading day period (the “measurement period”) in which, for each trading day of the measurement period, the trading price per \$1,000 principal amount of the convertible notes for such trading day was less than 98% of the product of the last reported sale price of our common stock for such trading day and the conversion rate on such trading day; or
- upon the occurrence of specified corporate events.

We separately account for the liability and equity components of convertible notes. The carrying amount of the liability component is determined by measuring the fair value of a similar liability that does not have an associated conversion feature, assuming our nonconvertible unsecured debt borrowing rate. The carrying value of the equity component, the conversion option, which is recognized as additional paid-in-capital, net of tax, creates a debt discount on the convertible notes. The debt discount is determined by deducting the relative fair value of the liability component from the proceeds of the convertible notes and is amortized to interest expense using an effective interest rate of 6.14% and 6.44% over the term of the 2017 Convertible Notes and the 2015 Convertible Notes, respectively. The equity components will not be remeasured as long as they continue to meet the conditions for equity classification.

The debt issuance costs related to the issuance of the Convertible Notes were allocated to the liability and equity components based on their relative values, as determined above. Total debt issuance costs for the 2017 Convertible Notes were \$7.5 million, of which \$5.7 million was allocated to the liability component and \$1.8 million was allocated to the equity component. Total debt issuance costs for the 2015 Convertible Notes were \$6.8 million, of which \$5.2 million was allocated to the liability component and \$1.6 million was allocated to the equity component. The debt issuance costs allocated to the liability components are amortized to interest expense using the effective interest method over the term of each of the Convertible Notes.

The Convertible Notes consisted of the following as of December 31:

	2019		2018	
	2017 Convertible Notes	2015 Convertible Notes	2017 Convertible Notes	2015 Convertible Notes
Remaining life in months	53	29	65	41
Liability component:				
Gross proceeds.....	\$ 289,000	\$ 224,500	\$ 289,000	\$ 224,500
Less: debt discount, net of amortization.....	(47,556)	(21,019)	(56,652)	(28,807)
Less: debt issuance cost, net of amortization	(3,705)	(1,959)	(4,457)	(2,716)
Net carrying amount	<u>\$ 237,739</u>	<u>\$ 201,522</u>	<u>\$ 227,891</u>	<u>\$ 192,977</u>
Equity component ⁽¹⁾	<u>\$ 70,140</u>	<u>\$ 52,903</u>	<u>\$ 70,140</u>	<u>\$ 52,903</u>

(1) Included in Additional paid-in capital on the consolidated balance sheets.

The following table presents the amount of interest expense recognized related to the 2017 Convertible Notes and the 2015 Convertible Notes:

	2019	2018	2017
Contractual interest coupon.....	\$ 10,470	\$ 10,470	\$ 8,348
Amortization of debt discount.....	16,880	15,855	11,801
Amortization of debt issuance costs	1,509	1,487	1,132
Total interest expense recognized	<u>\$ 28,859</u>	<u>\$ 27,812</u>	<u>\$ 21,281</u>

EETC

In 1999, we issued an EETC secured by a 747-400F aircraft in the amount of \$109.9 million which matured in February 2019.

Revolving Credit Facility

In December 2018, we amended and extended our previous three-year \$150.0 million secured revolving credit facility into a new four-year \$200.0 million secured revolving credit facility (the "Revolver"). The Revolver is for general corporate purposes and is currently secured by mortgages against several 747-400 and 767-300 aircraft, and related engines. Amounts outstanding under the Revolver are subject to borrowing base calculations, collateral coverage and fixed charge ratios. The Revolver accrues interest monthly at either LIBOR or an agreed upon rate plus a margin of 1.75% per annum for the first \$100.0 million and 2.00% per annum when utilization exceeds

\$100.0 million. The Revolver includes a facility fee of 0.35% on the undrawn portion. In connection with entry into the Revolver, we paid usual and customary fees. As of December 31, 2019, there was \$100.0 million outstanding and we had \$86.8 million of unused availability under the Revolver, based on the collateral borrowing base. In January 2020, our unused availability under the Revolver, based on the collateral borrowing base, increased to \$94.8 million.

Future Cash Payments for Debt

The following table summarizes the cash required to be paid by year and the carrying value of our debt reflecting the terms that were in effect as of December 31, 2019:

2020	\$ 397,043
2021	269,481
2022	592,060
2023	447,151
2024	481,920
Thereafter	<u>256,228</u>
Total debt cash payments	2,443,883
Less: unamortized debt discount and issuance costs	<u>(103,711)</u>
Debt	<u>\$ 2,340,172</u>

In February 2020, we refinanced two term loans that had payments of \$126.2 million due in 2020, included in the table above. See Note 20 for a discussion of the new term loans.

9. Leases and Guarantees

Adoption

We adopted the new lease accounting guidance using the modified retrospective method and applied it to all leases based on the contract terms in effect as of January 1, 2019. For existing contracts, we carried forward our historical assessments of (1) whether contracts are or contain leases, (2) lease classification and (3) initial direct costs.

Although our performance obligations under ACMI contracts include the provision of aircraft to customers, we do not separate any potential aircraft lease components from the nonlease components of these contracts as the provision of the crew, maintenance and insurance components are, in the aggregate, the predominant components. Such contracts are accounted for in their entirety under the amended guidance for revenue recognition.

Lessee

The following table summarizes rental expenses in:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Aircraft and engines	\$ 155,639	\$ 162,444	\$ 142,945
Purchased capacity, office, vehicles and other.....	\$ 34,572	\$ 63,650	\$ 46,817

As of December 31, 2019, we lease 22 aircraft, of which 20 are operating leases. Lease expirations for our leased aircraft range from March 2020 to June 2032. In addition, we lease a variety of office space, airport station locations, warehouse space, vehicles and equipment, with lease expirations ranging from March 2020 to May 2027. We also incur variable rental costs for aircraft, engines, ground equipment and storage space based on usage of the underlying equipment or property. For leases with terms greater than 12 months, including renewal options when appropriate, we record the related right-of-use asset and lease liability as the present value of fixed lease payments over the lease term. Since our leases do not typically provide a readily determinable discount rate, we use our incremental borrowing rate to discount lease payments to present value.

During the fourth quarter of 2019, we recorded an impairment charge of \$272.5 million to write down our operating lease right-of-use assets and finance lease assets related to our 747-400 freighter fleet. See Note 5 for further discussion.

The following table presents the lease-related assets and liabilities recorded on the consolidated balance sheet:

	Classification on the Consolidated Balance Sheets	2019
Assets		
Operating lease right-of-use assets	Operating lease right-of-use assets	\$ 231,133
Finance lease assets.....	Property and equipment, net	38,373
Less: Accumulated amortization on finance lease assets	Property and equipment, net	(6,038)
Total lease assets		<u>\$ 263,468</u>
Liabilities		
Current		
Operating lease liabilities.....	Current portion of long-term operating leases	\$ 141,973
Finance lease liabilities	Current portion of long-term debt and finance leases	10,886
Noncurrent		
Operating lease liabilities.....	Long-term operating leases	392,832
Finance lease liabilities	Long-term debt and finance lease	29,625
Total lease liabilities		<u>\$ 575,316</u>
Weighted Average Remaining Lease Term in years		
Operating Leases		3.94
Finance Leases		9.51
Weighted Average Discount Rate		
Operating Leases		4.52%
Finance Leases		15.77%

The following table presents information related to lease costs for finance and operating leases:

	2019
Fixed operating lease costs ⁽¹⁾	\$ 148,812
Variable operating lease costs ⁽¹⁾	22,089
Finance lease costs:	
Amortization of leased assets ⁽²⁾	2,508
Interest on lease liabilities ⁽³⁾	5,492
Total lease cost	<u>\$ 178,901</u>

(1) Expenses are classified within Aircraft rent and Navigation fees, landing fees and other rent on the consolidated statement of operations. Short-term lease contracts are not material.

(2) Expense is classified within Depreciation and amortization on the consolidated statement of operations.

(3) Expense is classified within Interest expense on the consolidated statement of operations.

The table below presents supplemental cash flow information related to leases as follows:

	<u>2019</u>
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows for operating leases	\$ 168,338
Operating cash flows for finance leases	5,492
Financing cash flows for finance leases	1,184

As of December 31, 2019, maturities of lease liabilities for the periods indicated were as follows:

	<u>Operating Leases</u>	<u>Finance Lease</u>	<u>Total</u>
2020.....	\$ 162,713	\$ 16,386	\$ 179,099
2021.....	167,824	6,000	173,824
2022.....	119,092	6,000	125,092
2023.....	66,509	6,000	72,509
2024.....	53,440	6,000	59,440
Thereafter.....	13,722	44,500	58,222
Total minimum rental payments	583,300	84,886	668,186
Less: imputed interest	48,495	44,375	92,870
Total lease liabilities	<u>\$ 534,805</u>	<u>\$ 40,511</u>	<u>\$ 575,316</u>

As of December 31, 2019, we have commitments for additional leases that have not yet commenced of \$20.2 million. These leases will commence in 2020 with lease terms of 1 year to 16 years.

Lessor

As of December 31, 2019, our contractual amount of minimum receipts, excluding taxes, for the periods indicated under Dry Leases reflecting the terms that were in effect were as follows:

2020	\$ 166,890
2021	145,288
2022	137,604
2023	104,139
2024	62,117
Thereafter.....	184,349
Total minimum lease receipts.....	<u>\$ 800,387</u>

In February 2020, we extended dry leases with a customer for two 777-200LRF aircraft, each for a period of ten years from the end of the existing lease term.

Guarantees and Indemnifications

In the ordinary course of business, we enter into numerous leasing and financing arrangements for real estate, equipment, aircraft and engines that have various guarantees included in the contracts. These guarantees are primarily in the form of indemnities. In both leasing and financing transactions, we typically indemnify the lessors and any financing parties against tort liabilities that arise out of the use, occupancy, manufacture, design, operation or maintenance of the leased premises or financed aircraft, regardless of whether these liabilities relate to the negligence of the indemnified parties. Currently, we believe that any future payments required under many of these guarantees or indemnities would be immaterial, as most tort liabilities and related indemnities are covered by insurance (subject to deductibles). However, payments under certain tax indemnities related to certain of our financing arrangements, if applicable, could be material, and would not be covered by insurance, although we believe that these payments are not probable. Certain leased premises, such as maintenance and storage facilities, typically include indemnities of such parties for any environmental liability that may arise out of or relate to the use of the leased premises. We also provide standard indemnification agreements to officers and directors in the ordinary course of business.

Financings and Guarantees

Our financing arrangements typically contain a withholding tax provision that requires us to pay additional amounts to the applicable lender or other financing party, if withholding taxes are imposed on such lender or other financing party as a result of a change in the applicable tax law. These increased costs and withholding tax provisions continue for the entire term of the applicable transaction and there is no limitation on the maximum additional amount we could be required to pay under such provisions. Any failure to pay amounts due under such provisions generally would trigger an event of default and, in a secured financing transaction, would entitle the lender to foreclose upon the collateral to realize the amount due.

10. Income Taxes

The significant components of the (benefit from) provision for income taxes are as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
<i>Current:</i>			
Federal.....	\$ -	\$ (4,518)	\$ (133)
State and local.....	22	68	(99)
Foreign.....	886	597	596
Total current (benefit) expense.....	<u>908</u>	<u>(3,853)</u>	<u>364</u>
<i>Deferred:</i>			
Federal.....	(172,038)	43,167	(87,185)
State and local.....	(8,908)	1,780	1,868
Foreign.....	393	(2,367)	3,987
Total deferred expense (benefit).....	<u>(180,553)</u>	<u>42,580</u>	<u>(81,330)</u>
Total income tax expense (benefit).....	<u>\$ (179,645)</u>	<u>\$ 38,727</u>	<u>\$ (80,966)</u>

The domestic and foreign earnings (loss) before income taxes are as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Domestic.....	\$ (510,739)	\$ 257,726	\$ 104,321
Foreign.....	37,981	51,648	39,051
(Loss) Income before income taxes.....	<u>\$ (472,758)</u>	<u>\$ 309,374</u>	<u>\$ 143,372</u>

A reconciliation of the provision (benefit) for income taxes applying the statutory federal income tax rate of 21.0% for the years ended December 31, 2019 and 2018, and 35.0% for the year ended December 31, 2017, respectively, is as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
U.S. federal statutory income tax rate.....	(21.0%)	21.0%	35.0%
State and local taxes based on income, net of federal benefit.....	(1.0%)	0.8%	0.3%
Change in deferred foreign and state tax rates.....	(0.2%)	(3.0%)	0.6%
Customer incentive.....	(3.3%)	(5.1%)	5.0%
Nondeductible compensation.....	1.1%	1.0%	1.4%
Other nondeductible expenses.....	0.3%	0.2%	—
Favorable resolution of income tax examinations.....	(12.6%)	—	—
Tax effect of foreign operations.....	(1.8%)	(2.2%)	(7.7%)
Impact of U.S. Tax Cuts and Jobs Act.....	—	—	(90.7%)
Other.....	0.5%	(0.2%)	(0.4%)
Effective income tax rate.....	<u>(38.0%)</u>	<u>12.5%</u>	<u>(56.5%)</u>

The effective income tax rate for the year ended December 31, 2019 differed from the U.S. statutory rate primarily due to the tax benefit related to the favorable completion of an IRS examination of our 2015 income tax return, and to a lesser extent, nontaxable changes in the fair value of a customer warrant liability (see Note 7).

In 2018, we recorded nondeductible and nontaxable changes in the fair value of a customer warrant liability (see Note 7), as well as a benefit on the remeasurement of our deferred income tax liability for Singapore.

The United States enacted the U.S. Tax Cuts and Jobs Act on December 22, 2017, which in part reduced the U.S. federal corporate income tax rate, repealed the corporate alternative minimum tax, provided full expensing of new and used assets, modified certain deductions and credits, and modified the use of federal net operating loss carryforwards (“NOLs”). We recorded provisional income tax benefits in connection with the remeasurement of our U.S. net deferred tax liability in 2017 as a result.

We repatriated a portion of the earnings of our overseas Dry Leasing subsidiaries in 2019 and recorded an immaterial amount of state income tax expense for the year.

Deferred tax assets and liabilities represent the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities.

The net noncurrent deferred tax asset (liability) was comprised of the following as of December 31:

	Assets (Liabilities)	
	2019	2018
Deferred tax assets:		
Net operating loss carryforwards and credits	\$ 556,051	\$ 357,022
Accrued compensation	12,695	13,176
Aircraft and other leases	120,122	17,688
Goodwill and other intangibles.....	-	2,765
Interest rate derivatives.....	857	1,179
Long-term debt	1,253	1,593
Obsolescence reserve.....	6,152	6,771
Stock-based compensation	3,123	3,203
Other	3,668	528
Total deferred tax assets	703,921	403,925
Valuation allowance	(24,513)	(29,871)
Net deferred tax assets.....	<u>\$ 679,408</u>	<u>\$ 374,054</u>
Deferred tax liabilities:		
Fixed assets.....	\$ (650,595)	\$ (589,649)
Customer incentive	(12,518)	(15,894)
Deferred maintenance.....	(40,227)	(22,747)
Goodwill and other intangibles.....	(1,714)	-
Operating lease right-of-use assets	(46,929)	-
Total deferred tax liabilities.....	<u>\$ (751,983)</u>	<u>\$ (628,290)</u>
Deferred taxes included within following balance sheet line items:		
Deferred taxes	\$ (74,040)	\$ (256,970)
Deferred costs and other assets.....	1,465	2,734
Net deferred tax assets (liabilities)	<u>\$ (72,575)</u>	<u>\$ (254,236)</u>

As of December 31, 2019 and 2018, we had U.S. NOLs, net of unrecognized tax benefits and valuation allowances, of approximately \$2.2 billion and \$1.3 billion, respectively, most of which will expire through 2037, if not utilized. We had alternative minimum tax credits of \$2.3 million and \$4.5 million as of December 31, 2019 and December 31, 2018, respectively, which are refundable on our income tax returns through 2022. They are reflected as current and long-term receivables in the accompanying consolidated balance sheets. We received a \$2.3 million refund for alternative minimum tax credits in 2019. Additionally, we had foreign NOLs for Hong Kong and Singapore, net of unrecognized tax benefits of approximately \$636.3 million and \$591.9 million as of December 31, 2019 and 2018, respectively, with no expiration date.

Certain of our subsidiaries participate in an aircraft leasing incentive program in Singapore, which entitles us to a reduced income tax rate on our Singapore Dry Leasing income through July 31, 2023. If any of those

subsidiaries are unable to remain in the program or the concessionary rate increases in the future, we could be subject to additional income taxes in Singapore, which could have a material effect on the results of our operations.

Section 382 of the Internal Revenue Code imposes an annual limitation on the amount of a corporation's U.S. federal taxable income that can be offset by NOLs if it experiences an "ownership change", as defined. We experienced an ownership change in the past that limits the use of prior NOLs to offset taxable income. If certain changes in our ownership occur prospectively, there could be an additional limitation on the amount of utilizable NOLs.

On each reporting date, management assesses whether we are more likely than not to realize some or all of our deferred tax assets. After our assessment, we maintained a valuation allowance of \$24.5 million and \$29.9 million against our deferred tax assets as of December 31, 2019 and 2018, respectively. The valuation allowance decreased by \$5.4 million during the year ended December 31, 2019 primarily due to the favorable completion of an IRS examination of our 2015 income tax return. The valuation allowance decreased by \$1.0 million during the year ended December 31, 2018. The valuation allowance was \$30.9 million at December 31, 2017 and decreased by \$18.5 million during the year ended December 31, 2017, primarily due to the change in the federal income tax rate under the U.S. Tax Cuts and Jobs Act. The valuation allowance is attributable to a limitation on NOL utilization resulting from the ownership change under Section 382. Due to this limitation, we expect a portion of our NOLs generated in 2004 and prior years to eventually expire unused.

A reconciliation of the beginning and ending unrecognized income tax benefits is as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Beginning balance	\$ 74,275	\$ 71,717	\$ 113,892
Additions for tax positions related to the current year	1,414	2,061	1,366
Additions for tax positions related to prior years	-	657	40
Reductions for tax positions related to prior years	<u>(53,306)</u>	<u>(160)</u>	<u>(43,581)</u>
Ending balance	<u>\$ 22,383</u>	<u>\$ 74,275</u>	<u>\$ 71,717</u>

The decrease in unrecognized income tax benefits during 2019 for tax positions related to prior years is primarily due to the favorable completion of an IRS examination of our 2015 income tax return.

If recognized, all of the unrecognized income tax benefits would favorably impact the effective income tax rate. We will maintain a liability for unrecognized income tax benefits until these uncertain positions are resolved or until the expiration of the applicable statute of limitations, if earlier.

Our policy is to record tax-related interest expense and penalties, if applicable, as a component of income tax expense. We recorded no interest benefit in 2019, 2018 or 2017. The cumulative liability for tax-related interest was \$0.1 million as of December 31, 2019 and 2018. We have not recorded any liability for income tax-related penalties, and the tax authorities historically have not assessed any.

For U.S. federal income tax purposes, the 2016 through 2019 income tax years remain subject to examination. There are no U.S. federal income tax examinations in progress. The Company files income tax returns in multiple states and foreign jurisdictions, primarily in Singapore and Hong Kong. The Company is currently undergoing income tax examinations in New York and Singapore. The 2013 through 2019 Singapore and Hong Kong income tax years are subject to examination.

11. Financial Instruments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (exit price). Inputs used to measure fair value are classified in the following hierarchy:

- Level 1 Unadjusted quoted prices in active markets for identical assets or liabilities;
- Level 2 Other inputs that are observable directly or indirectly, such as quoted prices in active markets for similar assets or liabilities, or inactive quoted prices for identical assets or liabilities in inactive markets;
- Level 3 Unobservable inputs reflecting assumptions about the inputs used in pricing the asset or liability.

We endeavor to utilize the best available information to measure fair value.

The carrying value of Cash and cash equivalents, Short-term investments and Restricted cash is based on cost, which approximates fair value.

Long-term investments consist of debt securities, maturing within five years, for which we have both the ability and the intent to hold until maturity. These investments are classified as held-to-maturity and reported at amortized cost. The fair value of our Long-term investments is based on a discounted cash flow analysis using the contractual cash flows of the investments and a discount rate derived from unadjusted quoted interest rates for debt securities of comparable risk. Such debt securities represent investments in PTCs related to EETCs issued by Atlas in 1998 and 1999. Interest on debt securities and accretion of discounts using the effective interest method are included in Interest income.

Term loans and notes consist of term loans, the Ex-Im Guaranteed Notes, the Private Placement Facility and EETCs. The fair values of these debt instruments and the Revolver are based on a discounted cash flow analysis using current borrowing rates for instruments with similar terms.

The fair value of our Convertible Notes is based on unadjusted quoted market prices for these securities.

The fair value of a customer warrant liability and certain long-term performance-based restricted shares are based on a Monte Carlo simulation which requires inputs such as our common stock price, the warrant strike price, estimated common stock price volatility, and risk-free interest rate, among others.

The following table summarizes the carrying value, estimated fair value and classification of our financial instruments as of:

	December 31, 2019				
	Carrying Value	Fair Value	Level 1	Level 2	Level 3
Assets					
Cash and cash equivalents.....	\$ 103,029	\$ 103,029	\$ 103,029	\$ -	\$ -
Short-term investments	879	879	-	-	879
Restricted cash	10,401	10,401	10,401	-	-
	<u>\$ 114,309</u>	<u>\$ 114,309</u>	<u>\$ 113,430</u>	<u>\$ -</u>	<u>\$ 879</u>
Liabilities					
Term loans and notes	\$ 1,800,911	\$ 1,885,750	\$ -	\$ -	\$ 1,885,750
Revolver	100,000	103,575	-	-	103,575
Convertible notes (1)	439,261	450,668	450,668	-	-
Customer warrant.....	24,345	24,345	-	24,345	-
	<u>\$ 2,364,517</u>	<u>\$ 2,464,338</u>	<u>\$ 450,668</u>	<u>\$ 24,345</u>	<u>\$ 1,989,325</u>

	December 31, 2018				
	<u>Carrying Value</u>	<u>Fair Value</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
Assets					
Cash and cash equivalents.....	\$ 221,501	\$ 221,501	\$ 221,501	\$ -	\$ -
Short-term investments	15,624	15,624	-	-	15,624
Restricted cash	11,240	11,240	11,240	-	-
Long-term investments and accrued interest.....	635	1,138	-	-	1,138
	<u>\$ 249,000</u>	<u>\$ 249,503</u>	<u>\$ 232,741</u>	<u>\$ -</u>	<u>\$ 16,762</u>
Liabilities					
Term loans and notes	\$ 2,048,972	\$ 1,976,373	\$ -	\$ -	\$ 1,976,373
Convertible notes (1).....	420,868	490,070	490,070	-	-
Customer warrant.....	99,000	99,000	-	99,000	-
	<u>\$ 2,568,840</u>	<u>\$ 2,565,443</u>	<u>\$ 490,070</u>	<u>\$ 99,000</u>	<u>\$ 1,976,373</u>

- (1) Carrying value is net of debt discounts and debt issuance costs. Hedge transactions associated with the Convertible Notes are reflected in additional paid-in-capital (see Note 8).

12. Segment Reporting

Our business is organized into three operating segments based on our service offerings: ACMI, Charter and Dry Leasing. All segments are directly or indirectly engaged in the business of air transportation services but have different commercial and economic characteristics. Each operating segment is separately reviewed by our chief operating decision maker to assess operating results and make resource allocation decisions. We do not aggregate our operating segments and, therefore, our operating segments are our reportable segments.

We use an economic performance metric called Direct Contribution, which shows the profitability of each segment after allocation of direct operating and ownership costs. Direct Contribution includes Income (loss) from continuing operations before income taxes and excludes the following: Special charges, Transaction-related expenses, nonrecurring items, Losses (gains) on the disposal of aircraft, Losses on early extinguishment of debt, Unrealized losses (gains) on financial instruments, Gains on investments and Unallocated income and expenses, net. Direct operating and ownership costs include crew costs, maintenance, fuel, ground operations, sales costs, aircraft rent, interest expense on the portion of debt used for financing aircraft, interest income on debt securities and aircraft depreciation. Unallocated income and expenses, net include corporate overhead, nonaircraft depreciation, noncash expenses and income, interest expense on the portion of debt used for general corporate purposes, interest income on nondebt securities, capitalized interest, foreign exchange gains and losses, other revenue and other non-operating costs.

Management allocates the costs attributable to aircraft operation and ownership for our operating fleet among the various segments based on the aircraft type and activity levels in each segment. Depreciation and amortization expense, aircraft rent, maintenance expense, and other aircraft-related expenses are allocated to segments based upon aircraft utilization because certain individual aircraft are utilized across segments interchangeably. Other allocation methods are standard activity-based methods that are commonly used in the industry.

The ACMI segment provides aircraft, crew, maintenance and insurance services to customers. Also included in the ACMI segment is CMI, whereby we provide crew, maintenance and insurance services but not the aircraft. Under ACMI and CMI contracts, customers generally guarantee a monthly level of operation at a predetermined rate for a defined period of time. The customer bears the commercial revenue risk and the obligation for other direct operating costs, including fuel.

The Charter segment provides full-paneload air cargo and passenger aircraft charters to customers, including the AMC, brokers, freight forwarders, direct shippers, airlines, sports teams and fans, and private charter customers. Charter customers generally pay a fixed charter fee or a variable fee generally based on the weight of cargo flown and we bear the direct operating costs.

The Dry Leasing segment provides for the leasing of aircraft and engines to customers, and aircraft- and lease-management services.

Other represents revenue for services that are not allocated to any segment, including administrative and management support services and flight simulator training.

The following table sets forth Operating Revenue and Direct Contribution for our reportable segments reconciled to Operating Income (loss) and Income (loss) from continuing operations before income taxes:

	2019	2018	2017
Operating Revenue:			
ACMI	\$ 1,247,770	\$ 1,192,704	\$ 988,741
Charter	1,305,860	1,313,484	1,034,562
Dry Leasing	200,781	168,470	119,820
Customer incentive asset amortization.....	(33,135)	(16,176)	(5,261)
Other	17,913	19,242	18,598
Total Operating Revenue	<u>\$ 2,739,189</u>	<u>\$ 2,677,724</u>	<u>\$ 2,156,460</u>
Direct Contribution:			
ACMI	\$ 218,459	\$ 235,706	\$ 229,498
Charter	149,372	211,661	150,144
Dry Leasing	70,386	48,904	39,939
Total Direct Contribution for Reportable Segments	<u>438,217</u>	<u>496,271</u>	<u>419,581</u>
Unallocated expenses and (income), net.....	(337,434)	(298,526)	(258,925)
Loss on early extinguishment of debt	(804)	-	(167)
Unrealized gain (loss) on financial instruments.....	75,109	123,114	(12,533)
Special charge	(638,373)	(9,374)	(106)
Transaction-related expenses	(4,164)	(2,111)	(4,509)
Loss (gain) on disposal of aircraft.....	(5,309)	-	31
Income (loss) from continuing operations before income taxes	<u>(472,758)</u>	<u>309,374</u>	<u>143,372</u>
Add back (subtract):			
Interest income	(4,296)	(6,710)	(6,009)
Interest expense	120,330	119,378	99,687
Capitalized interest.....	(2,274)	(4,727)	(7,389)
Loss on early extinguishment of debt	804	-	167
Unrealized (gain) loss on financial instruments.....	(75,109)	(123,114)	12,533
Other (income) expense, net.....	(27,668)	(10,659)	(387)
Operating Income (Loss)	<u>\$ (460,971)</u>	<u>\$ 283,542</u>	<u>\$ 241,974</u>

The following table disaggregates our Charter segment revenue by customer and service type:

	2019			2018			2017		
	Cargo	Passenger	Total	Cargo	Passenger	Total	Cargo	Passenger	Total
Commercial customers.....	\$579,001	\$ 51,729	\$ 630,730	\$644,344	\$ 33,785	\$ 678,129	\$519,507	\$ 18,713	\$ 538,220
AMC	313,236	361,894	675,130	327,751	307,604	635,355	205,776	290,566	496,342
Total Charter Revenue	<u>\$892,237</u>	<u>\$ 413,623</u>	<u>\$1,305,860</u>	<u>\$972,095</u>	<u>\$ 341,389</u>	<u>\$1,313,484</u>	<u>\$725,283</u>	<u>\$ 309,279</u>	<u>\$1,034,562</u>

Given the nature of our business and international flying, geographic information for revenue, long-lived assets and total assets is not presented because it is impracticable to do so.

We are exposed to a concentration of revenue from the AMC, Polar and DHL (see Note 3 for further discussion regarding Polar). No other customer accounted for more than 10.0% of our Total Operating Revenue. Revenue from the AMC was \$675.1 million for 2019, \$635.4 million for 2018 and \$496.3 million for 2017. Revenue from DHL was \$359.5 million for 2019, \$348.3 million for 2018 and \$262.6 million for 2017. We have not experienced any credit issues with either of these customers.

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Depreciation and amortization expense:			
ACMI	\$ 101,756	\$ 93,706	\$ 71,097
Charter.....	50,705	38,531	36,539
Dry Leasing.....	81,384	73,868	47,426
Unallocated	17,252	11,235	11,651
Total Depreciation and Amortization	<u>\$ 251,097</u>	<u>\$ 217,340</u>	<u>\$ 166,713</u>

13. Labor and Legal Proceedings

Labor

Pilots of Atlas and Southern Air, and flight dispatchers of Atlas and Polar are represented by the International Brotherhood of Teamsters (the “IBT”). We have a five-year collective bargaining agreement (“CBA”) with our Atlas pilots, which became amendable in September 2016, and a four-year CBA with the Southern Air pilots, which became amendable in November 2016. We also have a five-year CBA with our Atlas and Polar dispatchers, which was extended in April 2017 for an additional four years, making the CBA amendable in November 2021.

After we completed the acquisition of Southern Air in April 2016, we informed the IBT of our intention to pursue (and we have been pursuing) a complete operational merger of Atlas and Southern Air. The Atlas and Southern Air CBAs both have a defined and streamlined process for negotiating a joint CBA (“JCBA”) when a merger occurs, as in the case with the Atlas and Southern Air merger. Pursuant to the merger provisions in both CBAs, joint negotiations for a single CBA for Atlas and Southern Air should commence promptly. Further, once an integrated seniority list (“ISL”) of Atlas and Southern Air pilots is presented to the Company by the union, it triggers a nine month agreed-upon timeframe to negotiate a new JCBA with any unresolved issues promptly submitted to binding arbitration.

In August 2018, the Southern Air pilots ratified an agreement between Southern Air and the IBT for interim enhancements to the Southern Air pilots’ CBA. The agreement enhanced the wages and work rules of the Southern Air pilots and provides similar terms and conditions of employment to those provided to Atlas pilots in the Atlas CBA. The Southern Air pilot agreement became effective in September 2018.

The IBT has refused to follow the merger provisions in the Atlas and Southern Air CBAs. This has resulted in significant litigation, arbitrations and delay. As more fully stated below, the Company has prevailed in all of the merger related proceedings.

After the merger process began, the IBT also filed an application for mediation with the National Mediation Board (“NMB”) on behalf of the Atlas pilots, and subsequently the IBT filed a similar application on behalf of Southern Air pilots. We have opposed both mediation applications as they are not in accordance with the merger provisions in the parties’ existing CBAs. The NMB conducted a premediation investigation on the IBT’s Atlas application in June 2016, which has remained pending (along with the IBT’s Southern Air application) since 2016.

Due to the IBT’s refusal to adhere to the merger provisions of the respective CBAs, in February 2017, the Company filed a lawsuit against the IBT to compel arbitration on the issue of whether the merger provisions in Atlas and Southern Air’s CBAs apply to the bargaining process. On March 13, 2018, the Southern District Court of New York (“NY District Court”) ruled in the Company’s favor and ordered arbitration of this issue. The IBT appealed the NY District Court’s decision, and on November 21, 2019, the Second Circuit Court issued its decision in the Company’s favor affirming the NY District Court’s decision.

The Company and the IBT conducted the Atlas and Southern Air arbitrations for this issue in October 2018. The Company prevailed in both the Atlas and Southern Air management grievance arbitrations against the IBT, with decisions rendered on June 12, 2019 and August 26, 2019, respectively. Both arbitrators ruled that the IBT violated the CBAs by refusing to follow merger provisions in the parties' respective CBAs, which require formulation of a JCBA covering the combined pilot group. The arbitrators each ordered the IBT to promptly comply with the CBAs by submitting an ISL to the Company within 45 days of each arbitration decision, respectively. The IBT failed to comply with both deadlines for submitting the ISL, which passed on July 27, 2019 for Southern Air, and on October 10, 2019 for Atlas. As a result, on October 25, 2019, the Company filed an action in the U.S. District Court for the District of Columbia ("DC District Court") to enforce the Atlas and Southern Air arbitration decisions, which is currently pending.

In connection with its opposition to the merger provisions, the IBT commenced lawsuits in the DC District Court seeking to vacate both arbitration awards. On January 28, 2020, the DC District Court ruled in the Company's favor, granting its motions to dismiss both of the IBT's lawsuits.

Notwithstanding these pending proceedings, the Company and the IBT continue to meet to move the process forward and bargain in good faith for a new JCBA. Substantive progress has been made with tentative agreements for more than half of the articles in a new JCBA. Despite repeated requests from the Company, the IBT has yet to provide the Company with a comprehensive economic proposal.

In late September 2019, the IBT notified the Company that Atlas pilots represented by the IBT were departing from IBT Local 1224 and forming a new local union, IBT Local 2750 to represent them. The Company has been informed the Southern Air pilots will continue to be represented by IBT Local 1224. The Company continues to work with both Local 2750 and Local 1224 leadership groups.

In November 2017, the DC District Court granted the Company's request to issue a preliminary injunction to stop an illegal work slowdown and require the IBT to meet its obligations under the Railway Labor Act. Specifically, the DC District Court ordered the IBT to stop "authorizing, encouraging, permitting, calling, engaging in, or continuing" any illegal pilot slowdown activities, which were intended to gain leverage in pilot contract negotiations with the Company. In addition, the Court ordered the IBT to take affirmative action to prevent and to refrain from continuing any form of interference with the Company's operations or any other concerted refusal to perform normal pilot operations consistent with its status quo obligations under the Railway Labor Act. In December 2017, the IBT appealed the District Court's decision to the U.S. Court of Appeals for the District of Columbia Circuit ("Court of Appeals"). On July 5, 2019, the Court of Appeals, in a unanimous three judge panel, affirmed the DC District Court's ruling and denied the IBT's appeal. Therefore, the preliminary injunction remains in full force and effect.

We are subject to risks of work interruption or stoppage as permitted by the Railway Labor Act and may incur additional administrative expenses associated with union representation of our employees.

Matters Related to Alleged Pricing Practices

In the Netherlands, Stichting Cartel Compensation, successor in interest to claims of various shippers, has filed suit in the district court in Amsterdam against British Airways, KLM, Martinair, Air France, Lufthansa and Singapore Airlines seeking recovery for damages purportedly arising from allegedly unlawful pricing practices of such defendants. In response, British Airways, KLM, Martinair, Air France and Lufthansa filed third-party indemnification lawsuits against Polar Air Cargo, LLC ("Old Polar"), a consolidated subsidiary of the Company, and Polar, seeking indemnification in the event the defendants are found to be liable in the main proceedings. Another defendant, Thai Airways, filed a similar indemnification claim. Activities in the case have focused on various procedural issues, some of which are awaiting court determination. The Netherlands proceedings are likely to be affected by a decision readopted by the European Commission in March 2017, finding EU competition law violations by British Airways, KLM, Martinair, Air France and Lufthansa, among others, but not Old Polar or Polar. We are unable to reasonably predict the outcome of the litigation. If the Company, Old Polar or Polar were to incur an unfavorable outcome, such outcome may have a material adverse impact on our business, financial condition, results of operations or cash flows. We are unable to reasonably estimate a range of possible loss for this matter at this time.

Brazilian Customs Claim

Old Polar was cited for two alleged customs violations in Sao Paulo, Brazil, relating to shipments of goods dating back to 1999 and 2000. Each claim asserts that goods listed on the flight manifest of two separate Old Polar scheduled service flights were not properly presented to customs upon arrival and therefore were improperly brought into Brazil. The two claims, which also seek unpaid customs duties, taxes and penalties from the date of the alleged infraction, are approximately \$5.1 million in aggregate based on December 31, 2019 exchange rates.

Old Polar has presented evidence that certain of the alleged missing goods were in fact never onboard the aircraft (due to a change in plans by the relevant shipper) and thus no customs duties should be due. Further, in both cases, we believe that the amounts claimed are substantially overstated due to a calculation error when considering the type and amount of goods allegedly missing, among other things. In the pending claim for one of the cases, we have received an administrative decision dismissing the claim in its entirety, which remains subject to a mandatory appeal by the Brazil customs authorities. In the other case, there was an administrative decision in favor of the Brazil customs authorities and we are in the process of appealing this decision to the Brazil courts. As required to defend such claims, we have made deposits pending resolution of these matters. The balance was \$4.1 million as of December 31, 2019 and 2018, and is included in Deferred costs and other assets.

We are currently defending these and other Brazilian customs claims and the ultimate disposition of these claims, either individually or in the aggregate, is not expected to materially affect our financial condition, results of operations or cash flows.

Other

We have certain other contingencies incident to the ordinary course of business. Management does not expect that the ultimate disposition of such other contingencies will materially affect our financial condition, results of operations or cash flows.

14. Stock-Based and Long-term Incentive Compensation Plans

In 2007, our stockholders approved a Long-Term Incentive Plan (the “2007 Plan”). An aggregate of 0.6 million shares of common stock were reserved for issuance to participants under the 2007 Plan. The 2007 Plan provided for stock awards of up to approximately 2.8 million shares of AAWW’s common stock to employees in various forms, including cash awards and performance cash awards. Stock awards included nonqualified options, incentive stock options, share appreciation rights, restricted shares, restricted share units, performance shares and performance units, dividend equivalents and other share-based awards. In 2018, the stockholders approved a revised Long-Term Incentive Plan (the “2018 Plan”), which replaced previous plans. An aggregate of 0.5 million shares of common stock were reserved for issuance to participants under the 2018 Plan. No new awards have been made under previous plans since the adoption of the 2018 Plan in May 2018.

In 2019, the stockholders approved a revised Long-Term Incentive Plan (the “2019 Plan”), which replaced the 2018 Plan. An aggregate of 1.4 million shares of common stock were reserved for issuance to participants under the 2019 Plan. No new awards have been made under the 2018 Plan since the adoption of the 2019 Plan in May 2019. The portion of the 2019 Plan and previous plans applicable to employees is administered by the compensation committee of the board of directors, which also establishes the terms of the awards. Awards outstanding under the previous plans will continue to be governed by the terms of those plans and agreements under which they were granted. The 2019 Plan limits the terms of awards to ten years and prohibits the granting of awards more than ten years after the effective date of the 2019 Plan.

As of December 31, 2019, the 2019 Plan had a total of 0.9 million shares of common stock available for future award grants to management and members of the board of directors. Our compensation expense for all plans was \$24.1 million in 2019, \$19.1 million in 2018 and \$20.9 million in 2017. Income tax benefits recognized for share-based compensation arrangements were \$1.8 million in 2019, \$4.8 million in 2018 and \$5.3 million in 2017.

Restricted Share and Time-based Cash Awards

Restricted share awards, which have been granted in units, and time-based cash awards generally vest and are expensed over one-, three- or four- year periods. As of December 31, 2019, a total of 4.2 million restricted shares have been granted under each of the plans. All shares were valued at their fair market value, which is the closing price of the Company's stock on the date of grant. Unrecognized stock compensation cost as of December 31, 2019 is \$12.9 million and will be recognized over the remaining weighted average life of 1.5 years.

In 2019 and 2018, we granted time-based cash awards to employees and recognized compensation expense totaling \$6.2 million in 2019 and \$2.1 million in 2018. For the time-based cash awards, we had accruals of \$4.1 million as of December 31, 2019 and \$2.1 million as of December 31, 2018 in Accrued liabilities.

A summary of our restricted shares as of December 31, 2019 and changes during the year then ended are presented below:

Restricted Share Awards	Number of Shares	Weighted-Average Grant-Date Fair Value
Unvested as of December 31, 2018.....	604,795	\$ 50.34
Granted.....	207,180	52.61
Vested.....	(271,605)	48.30
Forfeited.....	(9,874)	47.90
Unvested as of December 31, 2019.....	<u>530,496</u>	<u>\$ 52.31</u>

The total fair value of shares vested on various vesting dates was \$13.1 million in 2019, \$13.4 million in 2018 and \$14.8 million in 2017. Weighted average grant date fair value was \$50.34 in 2018 and \$54.40 in 2017.

Performance Share and Performance Cash Awards

Performance share awards, which have been granted in units, and performance cash awards granted are expensed over three years, which generally is the requisite service period. Awards generally become vested if (1) we achieve certain specified performance levels compared with predetermined performance thresholds during a three-year period starting in the grant year and ending on December 31 three years later, and (2) the employee remains employed by us through the determination date which can be no later than four months following the end of the Performance Period. Full or partial vesting may occur for certain employee terminations. For performance share and performance cash awards granted in 2019 and 2018, the Company included a relative total shareholder return ("TSR") modifier which may impact the number of shares or cash earned at the end of the performance period. For these awards, the number of shares or cash earned based on the achievement of the predefined performance criteria will be reduced or increased if the Company's TSR over the performance period relative to a predefined comparator group of companies falls within defined ranges. The fair value of performance share units that include the TSR modifier is determined using a Monte Carlo valuation model on the date of grant. For the remaining awards that do not include a TSR modifier, the fair value of the performance share units is the quoted market value of the Company's stock on the date of grant and the fair value of performance cash awards is the value of the cash award on the date of grant.

The estimated compensation expense recognized for performance share and performance cash awards is net of estimated forfeitures. We assess the performance levels quarterly and record any change to compensation cost. For performance cash awards that include a TSR modifier, we assess the TSR component each quarter and record any change to compensation cost.

As of December 31, 2019, a total of 2.0 million performance shares have been granted. Unrecognized compensation cost as of December 31, 2019 is \$5.5 million and will be recognized over the remaining weighted average life of 1.5 years. For the performance cash awards, we had accruals of \$15.2 million as of December 31, 2019 and \$13.4 million as of December 31, 2018 in Other liabilities. We recognized compensation expense associated with the performance cash awards totaling \$7.6 million in 2019, \$6.8 million in 2018 and \$7.1 million in 2017.

A summary of our performance shares as of December 31, 2019 and changes during the year then ended are presented below:

Performance Share Awards	Number of Shares	Weighted-Average Grant-Date Fair Value
Unvested as of December 31, 2018.....	358,386	\$ 45.37
Granted.....	97,072	54.54
Vested.....	(194,666)	35.47
Forfeited.....	(3,633)	56.98
Unvested as of December 31, 2019.....	<u>257,159</u>	<u>\$ 56.17</u>

The total fair value of shares vested on various vesting dates in 2019 was \$6.9 million, \$7.7 million in 2018 and \$10.6 million in 2017. Weighted average grant date fair value was \$45.37 in 2018 and \$54.20 in 2017.

15. Profit Sharing, Incentive and Retirement Plans

Profit Sharing and Incentive Plans

We have an annual incentive compensation program for management employees. The program provides for payments to eligible employees based upon our financial performance, service performance and attainment of individual performance goals, among other things. In addition, our profit sharing plan allows IBT-represented Atlas crewmembers to receive payments from the plan based upon Atlas' financial performance. The profit sharing plan is subject to a minimum financial performance threshold. For both plans, we had accruals of \$28.6 million as of December 31, 2019 and \$36.0 million as of December 31, 2018 in Accrued liabilities. We recognized compensation expense associated with both plans totaling \$28.5 million in 2019, \$35.8 million in 2018 and \$26.9 million in 2017.

401(k) and 401(m) Plans

Participants in our retirement plan may contribute a portion of their annual compensation to a 401(k) plan on a pretax basis, subject to aggregate limits under the Code. In addition to 401(k) contributions, participants may contribute a portion of their eligible compensation to a 401(m) plan on an after-tax basis. On behalf of participants in the plan who make elective compensation deferrals, we provide a matching contribution subject to certain limitations. Employee contributions in the plan are vested at all times and our matching contributions are subject to a three-year cliff vesting provision, except for employees who are represented by a collective bargaining agreement and are subject to a three-year graded vesting provision. We recognized compensation expense associated with the plan matching contributions totaling \$15.9 million in 2019, \$13.9 million in 2018 and \$10.9 million in 2017.

16. Stock Repurchases

We record the repurchase of our shares of common stock at cost based on the settlement date of the transaction. These shares are classified as treasury stock, which is a reduction to stockholders' equity. Treasury shares are included in authorized and issued shares but excluded from outstanding shares.

In 2008, we established a stock repurchase program authorizing the repurchase of up to \$100.0 million of our common stock. In November 2013, we announced an increase of \$51.0 million to our stock repurchase program. As of December 31, 2019, we had repurchased a total of 3,307,911 shares of our common stock for approximately \$126.0 million under this program, resulting in \$25.0 million of available authorization remaining. Purchases may be made at our discretion in the form of open market repurchase programs, privately negotiated transactions, accelerated share repurchase programs or a combination of these methods. The actual timing and amount of our repurchases will depend on Company and market conditions.

In addition, we repurchased 185,688 and 180,084 shares of common stock from management in 2019 and 2018, respectively, in connection with the vesting of equity awards to pay the statutory tax withholdings of employees, at an average price of \$50.47 per share in 2019 and \$59.80 per share in 2018, and held the shares as treasury shares.

17. Earnings Per Share

Basic earnings per share (“EPS”) represents income (loss) divided by the weighted average number of common shares outstanding during the measurement period. Diluted EPS represents income (loss) divided by the weighted average number of common shares outstanding during the measurement period while also giving effect to all potentially dilutive common shares that were outstanding during the period using the treasury stock method.

The calculations of basic and diluted EPS were as follows:

	For the Years Ended December 31,		
	2019	2018	2017
Numerator:			
Income (loss) from continuing operations, net of taxes	\$ (293,113)	\$ 270,647	\$ 224,338
Less: Unrealized gain on financial instruments, net of tax ...	-	(123,114)	-
Diluted income (loss) from continuing operations, net of tax	<u>\$ (293,113)</u>	<u>\$ 147,533</u>	<u>\$ 224,338</u>
Denominator:			
Basic EPS weighted average shares outstanding	25,828	25,542	25,241
Effect of dilutive warrant	-	2,078	-
Effect of dilutive convertible notes	-	180	27
Effect of dilutive restricted stock	-	481	586
Diluted EPS weighted average shares outstanding	<u>25,828</u>	<u>28,281</u>	<u>25,854</u>
Earnings (loss) per share from continuing operations:			
Basic	<u>\$ (11.35)</u>	<u>\$ 10.60</u>	<u>\$ 8.89</u>
Diluted	<u>\$ (11.35)</u>	<u>\$ 5.22</u>	<u>\$ 8.68</u>
Loss per share from discontinued operations:			
Basic	<u>\$ -</u>	<u>\$ (0.00)</u>	<u>\$ (0.03)</u>
Diluted	<u>\$ -</u>	<u>\$ (0.00)</u>	<u>\$ (0.03)</u>
Earnings (loss) per share:			
Basic	<u>\$ (11.35)</u>	<u>\$ 10.60</u>	<u>\$ 8.85</u>
Diluted	<u>\$ (11.35)</u>	<u>\$ 5.22</u>	<u>\$ 8.64</u>

Anti-dilutive shares related to warrants issued in connection with our Convertible Notes that were out of the money and excluded were 15.3 million for 2019, 7.8 million in 2018 and 7.8 million in 2017. Diluted shares reflect the potential dilution that could occur from warrants and restricted shares using the treasury stock method. The calculation of EPS does not include restricted share units and warrants issued to a customer in which performance or market conditions were not satisfied of 10.6 million in 2019, 3.9 million in 2018 and 6.8 million in 2017.

18. Accumulated Other Comprehensive Income (Loss)

The following table summarizes the components of Accumulated other comprehensive income (loss):

	Interest Rate	Foreign Currency	Total
	Derivatives	Translation	
Balance as of December 31, 2017	\$ (4,002)	\$ 9	\$ (3,993)
Reclassification to interest expense	1,485	-	1,485
Tax effect	(354)	-	(354)
Reclassification of taxes	(970)	-	(970)
Balance as of December 31, 2018	\$ (3,841)	\$ 9	\$ (3,832)
Reclassification to interest expense	1,336	-	1,336
Tax effect	(322)	-	(322)
Balance as of December 31, 2019	<u>\$ (2,827)</u>	<u>\$ 9</u>	<u>\$ (2,818)</u>

Interest Rate Derivatives

As of December 31, 2019, there was \$3.7 million of unamortized net realized loss before taxes remaining in Accumulated other comprehensive income (loss) related to terminated forward-starting interest rate swaps, which had been designated as cash flow hedges to effectively fix the interest rates on two 747-8F financings in 2011 and three 777-200LRF financings in 2014. The net loss is amortized and reclassified into Interest expense over the remaining life of the related debt. Net realized losses expected to be reclassified into earnings were \$1.3 million and \$1.5 million for 2019 and 2018, respectively. Net realized losses expected to be reclassified into earnings within the next 12 months are \$1.2 million as of December 31, 2019.

19. Selected Quarterly Financial Information (unaudited)

The following table summarizes the 2019 and 2018 quarterly results:

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2019*				
Total Operating Revenue.....	\$ 679,683	\$ 663,918	\$ 648,539	\$ 747,049
Operating Income (loss).....	46,874	8,970	(879)	(515,936)
Income (Loss) from continuing operations, net of taxes.....	(29,710)	86,868	59,974	(410,245)
Net Income (Loss).....	<u>\$ (29,710)</u>	<u>\$ 86,868</u>	<u>\$ 59,974</u>	<u>\$ (410,245)</u>
Earnings (Loss) per share from continuing operations:				
Basic.....	<u>\$ (1.15)</u>	<u>\$ 3.36</u>	<u>\$ 2.32</u>	<u>\$ (15.86)</u>
Diluted**.....	<u>\$ (1.15)</u>	<u>\$ 1.61</u>	<u>\$ 2.32</u>	<u>\$ (15.86)</u>
Earnings (Loss) per share:				
Basic.....	<u>\$ (1.15)</u>	<u>\$ 3.36</u>	<u>\$ 2.32</u>	<u>\$ (15.86)</u>
Diluted**.....	<u>\$ (1.15)</u>	<u>\$ 1.61</u>	<u>\$ 2.32</u>	<u>\$ (15.86)</u>
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2018***				
Total Operating Revenue.....	\$ 590,014	\$ 666,145	\$ 656,607	\$ 764,958
Operating Income.....	40,569	60,946	54,470	127,557
Income (Loss) from continuing operations, net of taxes.....	9,628	(21,123)	71,138	211,004
Loss from discontinued operations, net of taxes.....	(16)	(27)	(7)	(30)
Net Income (Loss).....	<u>\$ 9,612</u>	<u>\$ (21,150)</u>	<u>\$ 71,131</u>	<u>\$ 210,974</u>
Earnings (Loss) per share from continuing operations:				
Basic.....	<u>\$ 0.38</u>	<u>\$ (0.83)</u>	<u>\$ 2.78</u>	<u>\$ 8.25</u>
Diluted****.....	<u>\$ 0.37</u>	<u>\$ (0.83)</u>	<u>\$ 0.84</u>	<u>\$ 2.73</u>
Loss per share from discontinued operations:				
Basic.....	<u>\$ (0.00)</u>	<u>\$ (0.00)</u>	<u>\$ (0.00)</u>	<u>\$ (0.00)</u>
Diluted.....	<u>\$ (0.00)</u>	<u>\$ (0.00)</u>	<u>\$ (0.00)</u>	<u>\$ (0.00)</u>
Earnings (Loss) per share:				
Basic.....	<u>\$ 0.38</u>	<u>\$ (0.83)</u>	<u>\$ 2.78</u>	<u>\$ 8.25</u>
Diluted****.....	<u>\$ 0.37</u>	<u>\$ (0.83)</u>	<u>\$ 0.84</u>	<u>\$ 2.73</u>

* Included in the first and fourth quarters were unrealized losses on financial instruments of \$46.6 million and \$3.8 million, respectively. Included in the second and third quarters were unrealized gains on financial instruments of \$42.3 million and \$83.2 million, respectively. Included in the third and fourth quarters were impairment charges of \$22.2 million and \$616.2 million, respectively.

** In 2019, the sum of quarterly diluted EPS amounts differs from the full year diluted EPS. The difference primarily relates to the exclusion from the calculation of diluted EPS of unrealized gains on financial instruments in the third and fourth quarters, and anti-dilutive shares in the second quarter, both related to a warrant issued to a customer.

- *** Included in the first and second quarters were unrealized losses on financial instruments of \$7.7 million and \$50.0 million, respectively. Included in the third and fourth quarters were unrealized gains on financial instruments of \$46.1 million and \$134.8 million, respectively.
- **** In 2018, the sum of quarterly diluted EPS amounts differs from the full year diluted EPS. The difference primarily relates to the exclusion from the calculation of diluted EPS of unrealized gains on financial instruments in the third and fourth quarters, and anti-dilutive shares in the third quarter, both related to a warrant issued to a customer.

20. Subsequent Events

In February 2020, we extended dry leases with a customer for two 777-200LRF aircraft, each for a period of ten years from the end of the existing lease term. In connection with the lease extensions, we refinanced two secured term loans that were due in 2020 with two new term loans. One term loan is for 126 months in the amount of \$82.0 million at a fixed interest rate of 3.27% with a final payment of \$12.5 million due in July 2030. The other term loan is for 130 months in the amount of \$82.0 million at a fixed interest rate of 3.28% with a final payment of \$12.5 million due in November 2030. The new term loans are each secured by a mortgage against a 777-200LRF aircraft and contain customary covenants and events of default with principal and interest payable quarterly. In connection with entry into these term loans, we paid usual and customary fees.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

We carried out an evaluation, under the supervision and with the participation of our management, including our President and Chief Executive Officer (“Principal Executive Officer”) and our Executive Vice President and Chief Financial Officer (“Principal Financial Officer”), of the effectiveness of our disclosure controls and procedures, as such term is defined under Rules 13a-15(e) and 15d-15(e) promulgated under the Exchange Act, as of the end of the period covered by this Report. Based on this evaluation, our Principal Executive Officer and our Principal Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2019.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining an adequate system of internal control over financial reporting, as defined in the Exchange Act Rule 13a-15(f). Management conducted an assessment of our internal control over financial reporting based on the framework established by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control — Integrated Framework (2013)*. Based on the assessment, management concluded that, as of December 31, 2019, our internal control over financial reporting is effective. Our internal control over financial reporting as of December 31, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

Changes in Internal Control over Financial Reporting.

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended December 31, 2019, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The required information is incorporated by reference from our Proxy Statement to be filed with respect to our 2020 Annual Meeting of Stockholders. Information regarding the identification of our executive officers is included in Part I of this annual report. We have adopted a code of conduct that applies to all of our employees, along with a Code of Ethics applicable to our Chief Executive Officer, Chief Financial Officer, Corporate Controller, Treasurer and members of the board of directors (the “Code of Ethics”). The Code of Ethics is monitored by our Audit Committee, and includes certain provisions regarding disclosure of violations and waivers of, and amendments to, the Code of Ethics by covered parties. A copy of the Code of Ethics is available on our website at www.atlasairworldwide.com.

ITEM 11. EXECUTIVE COMPENSATION

The required information is incorporated by reference from our Proxy Statement to be filed with respect to our 2020 Annual Meeting of Stockholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The required information is incorporated by reference from our Proxy Statement to be filed with respect to our 2020 Annual Meeting of Stockholders.

The following table summarizes the securities authorized for issuance under our equity compensation plans at December 31, 2019:

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders.....	787,655	\$ - (1)	942,260
Total.....	<u>787,655</u>	<u>-</u>	<u>942,260</u>

(1) Includes 787,655 of restricted and performance shares and units, which have no exercise price.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The required information is incorporated by reference from our Proxy Statement to be filed with respect to our 2020 Annual Meeting of Stockholders.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The required information is incorporated by reference from our Proxy Statement to be filed with respect to our 2020 Annual Meeting of Stockholders.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) 1. Financial Statements:

- Report of Independent Registered Public Accounting Firm
- Consolidated Balance Sheets as of December 31, 2019 and 2018
- Consolidated Statements of Operations for the years ended December 31, 2019, 2018 and 2017
- Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2019, 2018 and 2017
- Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017
- Consolidated Statements of Stockholders' Equity for the years ended December 31, 2019, 2018 and 2017
- Notes to Consolidated Financial Statements

2. Financial Statement Schedule:

Schedule II—Valuation and Qualifying Accounts (in thousands)

<u>Description</u>	<u>Balance at Beginning of Period</u>	<u>Additions Charged to Costs and Expenses</u>	<u>Deductions, net of recoveries</u>	<u>Balance at End of Period</u>
For the Year ended December 31, 2019				
Allowances deducted in the balance sheet from the assets to which they apply:				
Allowance for doubtful accounts.....	\$ 1,563	\$ 41	\$ 218	\$ 1,822
For the Year ended December 31, 2018				
Allowances deducted in the balance sheet from the assets to which they apply:				
Allowance for doubtful accounts.....	\$ 1,494	\$ 12	\$ 57	\$ 1,563
For the Year ended December 31, 2017				
Allowances deducted in the balance sheet from the assets to which they apply:				
Allowance for doubtful accounts.....	\$ 997	\$ 198	\$ 299	\$ 1,494

All other schedules have been omitted because they are not applicable, not required or the information is included elsewhere in the Financial Statements or Notes thereto.

3. Exhibits: (see accompanying Exhibit Index of this Report for a list of exhibits filed or furnished with or incorporated by reference in this Report).

EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Description</u>
3.1(4)	Certificate of Incorporation of the Company.
3.1.1(30)	Atlas Air Worldwide Holdings, Inc. Certificate of Amendment of Certificate of Incorporation.
3.2(13)	Atlas Air Worldwide Holdings, Inc. By-Laws, Amended and Restated as of September 19, 2014 and as Further Amended as of December 12, 2016.
4.1.1(3)	7.63% Atlas Air Pass Through Certificate 1999-1B-1, Certificate No. B-1.
4.1.2(3)	8.77% Atlas Air Pass Through Certificate 1999-1C-1, Certificate No. C-1.
4.1.3(2)	Pass Through Trust Agreement, dated as of February 9, 1998, between Atlas Air, Inc. and Wilmington Trust Company, as Trustee, relating to the Atlas Air Pass Through Trust 1998-1B-0.
4.1.4(2)	Pass Through Trust Agreement, dated as of February 9, 1998, between Atlas Air, Inc. and Wilmington Trust Company, as Trustee, relating to the Atlas Air Pass Through Trust 1998-1B-S.
4.1.5(2)	Pass Through Trust Agreement, dated as of February 9, 1998, between Atlas Air, Inc. and Wilmington Trust Company, as Trustee, relating to the Atlas Air Pass Through Trust 1998-1C-0.
4.1.6(2)	Pass Through Trust Agreement, dated as of February 9, 1998, between Atlas Air, Inc. and Wilmington Trust Company, as Trustee, relating to the Atlas Air Pass Through Trust 1998-1C-S.
4.1.7(3)	Pass Through Trust Agreement, dated as of April 13, 1999, between Wilmington Trust Company, as Trustee, and Atlas Air, Inc.
4.1.8(3)	Trust Supplement No. 1999-1B, dated April 13, 1999, between Wilmington Trust Company, as Trustee, and Atlas Air, Inc. to Pass Through Trust Agreement, dated as of April 1, 1999.
4.1.9(3)	Trust Supplement No. 1999-1C, dated April 13, 1999, between Wilmington Trust Company, as Trustee, and Atlas Air, Inc. to Pass Through Trust Agreement, dated as of April 1, 1999.
4.1.10(2)	Note Purchase Agreement, dated as of February 9, 1998, among the Company, Wilmington Trust Company and First Security Bank, National Association (“Note Purchase Agreement 1998”)
4.1.11(1)	Form of Leased Aircraft Participation Agreement (Participation Agreement among Atlas Air, Inc., Lessee, First Security Bank, National Association, Owner Trustee, and Wilmington Trust Company, Mortgagee and Loan Participant) (Exhibit A-1 to Note Purchase Agreement 1998).
4.1.12(1)	Form of Owned Aircraft Participation Agreement (Participation Agreement between Atlas Air, Inc., Owner, and Wilmington Trust Company, as Mortgagee, Subordination Agent and Trustee) (Exhibit C-1 to Note Purchase Agreement 1998).
4.1.13(1)	Form of Lease (Lease Agreement between First Security Bank, National Association, Lessor, and Atlas Air, Inc., Lessee) (Exhibit A-2 to Note Purchase Agreement 1998).
4.1.14(3)	Note Purchase Agreement, dated as of April 13, 1999, among Atlas Air, Inc., Wilmington Trust Company, as Trustee, Wilmington Trust Company, as Subordination Agent, First Security Bank, National Association, as Escrow Agent, and Wilmington Trust Company, as Paying Agent (“Note Purchase Agreement 1999”).
4.1.15(3)	Form of Leased Aircraft Participation Agreement (Participation Agreement among Atlas Air, Inc., Lessee, First Security Bank, National Association, Owner Trustee, and Wilmington Trust Company, Mortgagee and Loan Participant) (Exhibit A-1 to Note Purchase Agreement 1999).
4.1.16(3)	Form of Lease (Lease Agreement between First Security Bank, National Association, Lessor, and Atlas Air, Inc., Lessee) (Exhibit A-2 to Note Purchase Agreement 1999).
4.1.17(3)	Form of Owned Aircraft Participation Agreement (Participation Agreement between Atlas Air, Inc., Owner, and Wilmington Trust Company, as Mortgagee, Subordination Agent and Trustee) (Exhibit C-1 to Note Purchase Agreement 1999).

Exhibit Number	Description
4.2(14)	Participation Agreement, dated as of January 30, 2012, among Helios Leasing I LLC, as Lessor, Helios Leasing Trust, as Lessor Parent, Wilmington Trust Company, as Trustee, Atlas Air, Inc., as Lessee, Wilmington Trust Company, as Indenture Trustee, Apple Bank for Savings, as Initial Guaranteed Lender, Wells Fargo Bank Northwest, National Association, as Security Trustee, and Export-Import Bank of the United States. (Portions of this document have been redacted and filed separately with the Securities and Exchange Commission.)
4.3(15)	Indenture, dated as of May 1, 2012, by and among Helios Leasing I LLC, Apple Bank for Savings, Wilmington Trust Company, not in its individual capacity but solely as Indenture Trustee, Wells Fargo Bank Northwest, National Association, and Export-Import Bank of the United States.
4.4(15)	Secured Fixed Rate Global Note, dated June 19, 2012.
4.5(15)	Secured Fixed Rate Global Note, dated July 31, 2012.
4.6(16)	Secured Fixed Rate Global Note, dated October 10, 2012.
4.7(16)	Secured Fixed Rate Global Note dated, December 12, 2012.
4.8(17)	Secured Fixed Rate Global Note, dated May 28, 2013.
4.9(18)	Secured Fixed Rate Global Note, dated January 30, 2014.
4.10.1(19)	Indenture, dated June 3, 2015, between the Company and Wilmington Trust, National Association, as Trustee.
4.10.2(19)	First Supplemental Indenture, dated June 3, 2015, between the Company and Wilmington Trust, National Association, as Trustee.
4.10.3(19)	2.25% Convertible Senior Note due 2022.
4.11.1(19)	Senior Indenture, dated June 3, 2015, between the Company and Wilmington Trust, National Association, as Trustee.
4.11.2(23)	Second Supplemental Indenture, dated May 23, 2017, between the Company and Wilmington Trust, National Association, as Trustee.
4.11.3(23)	1.875% Convertible Senior Note due 2024.
4.12	Description of Securities Registered under Section 12 of the Securities Exchange Act of 1934, which is filed herewith as Exhibit 4.12.
10.1(7)	Employment Agreement, dated April 21, 2006, between Atlas Air, Inc. and William J. Flynn.
10.1.1(11)	Amendment, dated as of December 31, 2008, to the Employment Agreement between Atlas Air, Inc. and William J. Flynn.
10.1.2(12)	Amendment, dated as of July 1, 2011, to the Employment Agreement between Atlas Air, Inc. and William J. Flynn.
10.1.3(29)	Letter Agreement, dated as of June 28, 2019, by and among the Company, Atlas Air, Inc. and William J. Flynn.
10.2(8)	Amended and Restated Employment Agreement, dated as September 19, 2006, between Atlas Air, Inc. and John W. Dietrich.
10.2.1(11)	Amendment, dated as of December 31, 2008, to the Amended and Restated Employment Agreement between Atlas Air, Inc. and John W. Dietrich.
10.2.2(12)	Amendment, dated as of July 1, 2011, to the Employment Agreement between Atlas Air, Inc. and John W. Dietrich.
10.2.3(29)	Employment Agreement, dated as of July 1, 2019, by and between Atlas Air, Inc. and John W. Dietrich.
10.4.1(24)	Atlas Air Worldwide Holdings, Inc. Amended and Restated 2016 Incentive Plan.
10.5(22)	Atlas Air Worldwide Holdings, Inc. 2018 Incentive Plan.
10.6(25)	Atlas Air Worldwide Holdings, Inc. 2018 Long Term Cash Incentive Plan.
10.6.1(28)	Atlas Air Worldwide Holdings, Inc. 2019 Long Term Cash Incentive Program.

Exhibit Number	Description
10.7(29)	Atlas Air Worldwide Holdings, Inc. Annual Incentive Plan for Senior Executives (As Amended and Restated, Effective as of July 1, 2019).
10.8(25)	Form of Performance Share Unit Agreement between Atlas Air Worldwide Holdings, Inc. and William J. Flynn.
10.9(25)	Form of Restricted Stock Unit Agreement between Atlas Air Worldwide Holdings, Inc. and William J. Flynn.
10.10(28)	Form of Performance Share Unit Agreement.
10.10.1(29)	Form of Amendment to Performance Share Unit Agreements between the Company and Certain Executive Officers.
10.11(28)	Form of Restricted Stock Unit Agreement.
10.11.1(25)	Form of Restricted Stock Unit Agreement between Atlas Air Worldwide Holdings, Inc. and Non-Employee Members of the Board.
10.11.2(29)	Form of Amendment to Restricted Stock Unit Agreements between the Company and Certain Executive Officers.
10.12(29)	Form of Executive Officer Retention Agreement.
10.12.1(29)	Atlas Air Worldwide Holdings, Inc. Benefits Program for Senior Executives (As Amended and Restated, Effective as of July 1, 2019).
10.13(27)	Board of Directors Compensation Program.
10.14(10)	Atlas Air, Inc. Profit Sharing Plan.
10.14.1(11)	Amendment, dated as of December 31, 2008, to Atlas Air, Inc. Profit Sharing Plan.
10.15(5)	Form of Directors and Officers Indemnification Agreement.
10.16(20)	Atlas Air, Inc. 401(K) Restoration and Voluntary Deferral Plan, Restated effective as of February 11, 2011, and as Further Amended effective January 1, 2015.
10.17(6)	Agreement, dated October 1, 2018, among USTRANSCOM and the Company, among others.
10.18(9)	Blocked Space Agreement, dated June 28, 2007, between Polar Air Cargo Worldwide, Inc. and DHL Network Operations (USA), Inc. (Portions of this document have been redacted and filed separately with the Securities and Exchange Commission.).
10.19(9)	Amendment No. 1, dated as of July 30, 2007, to Blocked Space Agreement between Polar Air Cargo Worldwide, Inc. and DHL Network Operations (USA), Inc.
10.20(9)	Flight Services Agreement, dated as of June 28, 2007, between Atlas Air, Inc. and Polar Air Cargo Worldwide, Inc. (Portions of this document have been redacted and filed separately with the Securities and Exchange Commission.).
10.21.1(19)	Underwriting Agreement, dated May 28, 2015, between the Company and Morgan Stanley Co. LLC and BNP Paribas Securities Corp., as Managers of the Several Underwriters.
10.21.2(19)	Base convertible hedge transaction confirmation, dated as of May 28, 2015, between Morgan Stanley & Co. International plc and the Company.
10.21.3(19)	Base warrant transaction confirmation, dated as of May 28, 2015, between Morgan Stanley & Co. International plc and the Company.
10.21.4(19)	Additional convertible note hedge transaction confirmation, dated as of June 1, 2015, between Morgan Stanley & Co. International plc and the Company.
10.21.5(19)	Additional warrant transaction confirmation, dated as of June 1, 2015, between Morgan Stanley & Co. International plc and the Company.
10.21.6(19)	Base convertible note hedge transaction confirmation, dated as of May 28, 2015, between BNP Paribas and the Company.

Exhibit Number	Description
10.21.7(19)	Base warrant transaction confirmation, dated as of May 28, 2015, between BNP Paribas and the Company.
10.21.8(19)	Additional convertible note hedge transaction confirmation, dated as of June 1, 2015, between BNP Paribas and the Company.
10.21.9(19)	Additional warrant transaction confirmation, dated as of June 1, 2015, between BNP Paribas and the Company.
10.22.1(23)	Underwriting Agreement, dated May 17, 2017, between the Company and Morgan Stanley & Co. LLC, BNP Paribas Securities Corp. and Citigroup Global Markets Inc., as Managers of the several Underwriters.
10.22.2(23)	Base convertible note hedge transaction confirmation, dated as of May 17, 2017, between Morgan Stanley & Co. International plc and the Company.
10.22.3(23)	Base warrant transaction confirmation, dated as of May 17, 2017, between Morgan Stanley & Co. International plc and the Company.
10.22.4(23)	Additional convertible note hedge transaction confirmation, dated as of May 18, 2017, between Morgan Stanley & Co. International plc and the Company.
10.22.5(23)	Additional warrant transaction confirmation, dated as of May 18, 2017, between Morgan Stanley & Co. International plc and the Company.
10.22.6(23)	Base convertible note hedge transaction confirmation, dated as of May 17, 2017, between Citibank, N.A. and the Company.
10.22.7(23)	Base warrant transaction confirmation, dated as of May 17, 2017, between Citibank, N.A. and the Company.
10.22.8(23)	Additional convertible note hedge transaction confirmation, dated as of May 18, 2017, between Morgan Stanley & Co. International plc and the Company.
10.22.9(23)	Additional warrant transaction confirmation, dated as of May 18, 2017, between Citibank N.A. and the Company.
10.22.10(23)	Base convertible note hedge transaction confirmation, dated as of May 17, 2017, between BNP Paribas and the Company.
10.22.11(23)	Base warrant transaction confirmation, dated as of May 17, 2017, between BNP Paribas and the Company.
10.22.12(23)	Additional convertible note hedge transaction confirmation, dated as of May 18, 2017, between BNP Paribas and the Company.
10.22.13(23)	Additional warrant transaction confirmation, dated as of May 18, 2017, between BNP Paribas and the Company.
10.23.1(21)	Investment Agreement, dated as of May 4, 2016, by and between Atlas Air Worldwide Holdings, Inc. and Amazon.com, Inc.
10.23.2(28)	Investment Agreement, dated as of March 27, 2019, between Atlas Air Worldwide Holdings, Inc. and Amazon.com, Inc.
10.23.3(28)	Amended and Restated Stockholders Agreement, dated as of March 27, 2019, by and between Atlas Air Worldwide Holdings, Inc. and Amazon.com, Inc.
10.23.4(21)	Warrant to Purchase 7,500,000 shares of Common Stock of Atlas Air Worldwide Holdings, Inc., issued May 4, 2016.
10.23.5(21)	Warrant to Purchase 3,750,000 shares of Common Stock of Atlas Air Worldwide Holdings, Inc., issued May 4, 2016.
10.23.6(28)	Warrant to Purchase 6,632,576 shares of Common Stock of Atlas Air Worldwide Holdings, Inc. issued March 27, 2019.
14.1(26)	Atlas Air Worldwide Holdings, Inc. Code of Ethics applicable to the Chief Executive Officer, Senior Financial Officers and members of the Board of Directors.
21.1	Subsidiaries' List, which is filed herewith as Exhibit 21.1.

Exhibit Number	Description
23.1	Consent of PricewaterhouseCoopers LLP, which is filed herewith as Exhibit 23.1.
24.1	Power of Attorney, which is filed herewith as Exhibit 24.1.
31.1	Rule 13a-14(a)/15d-14(a) Certification of the Chief Executive Officer, furnished herewith.
31.2	Rule 13a-14(a)/15d-14(a) Certification of the Chief Financial Officer, furnished herewith.
32.1	Certification of periodic financial report pursuant to Section 906 of Sarbanes Oxley Act of 2002, furnished herewith.
32.2	Certification of periodic financial report pursuant to Section 906 of Sarbanes Oxley Act of 2002, furnished herewith.
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document. *
101.SCH	Inline XBRL Taxonomy Extension Schema Document. *
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document. *
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document. *
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document. *
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document. *
104	Cover Page Interactive Data File – the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document (included in Exhibit 101).

* Attached as Exhibit 101 to this report are the following, formatted in Inline XBRL (Extensible Business Reporting Language): (i) Consolidated Balance Sheets at December 31, 2019 and December 31, 2018, (ii) Consolidated Statements of Operations for the years ended December 31, 2019, 2018 and 2017, (iii) Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2019, 2018 and 2017, (iv) Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017, (v) Consolidated Statements of Stockholders' Equity for the years ended December 31, 2019, 2018 and 2017 and (vi) Notes to Consolidated Financial Statements. In accordance with Rule 406T of Regulation S-T, the XBRL related information in Exhibit 101 to this Annual Report on Form 10-K shall not be deemed to be "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section, and shall not be part of any registration statement or other document filed under the Securities Act or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

- (1) Incorporated by reference to the exhibits to Atlas Air's Registration Statement on Form S-4 (No. 333-36268).
- (2) Incorporated by reference to the exhibits to Atlas Air's Annual Report on Form 10-K for the year ended December 31, 1997.
- (3) Incorporated by reference to the exhibits to Atlas Air's Registration Statement on Form S-3 (No. 333-71833).
- (4) Incorporated by reference to the exhibits to the Company's Current Report on Form 8-K dated February 16, 2001.
- (5) Incorporated by reference to the exhibits to the Company's Current Report on Form 8-K dated November 14, 2005.
- (6) Incorporated by reference to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2018.
- (7) Incorporated by reference to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2006.
- (8) Incorporated by reference to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2006.
- (9) Incorporated by reference to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2007.

- (10) Incorporated by reference to the exhibits to the Company's Annual Report on Form 10-K for the year ended December 31, 2007.
- (11) Incorporated by reference to the exhibits to the Company's Annual Report on Form 10-K for the year ended December 31, 2008.
- (12) Incorporated by reference to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2011.
- (13) Incorporated by reference to Exhibit 3 to the Company's Current Report on Form 8-K dated December 12, 2016.
- (14) Incorporated by reference to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2012.
- (15) Incorporated by reference to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012.
- (16) Incorporated by reference to the exhibits to the Company's Annual Report on Form 10-K for the year ended December 31, 2012.
- (17) Incorporated by reference to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2013.
- (18) Incorporated by reference to the exhibits in the Company's Annual Report on Form 10-K for the year ended December 31, 2013.
- (19) Incorporated by reference to exhibits in the Company's Current Report on Form 8-K dated June 3, 2015.
- (20) Incorporated by reference to exhibits in the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015.
- (21) Incorporated by reference to exhibits in the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016.
- (22) Incorporated by reference to exhibit B in the Company's definitive Proxy Statement dated April 18, 2018.
- (23) Incorporated by reference to exhibits in the Company's Current Report on Form 8-K dated May 23, 2017.
- (24) Incorporated by reference to Exhibit B to the Company's definitive Proxy Statement dated April 18, 2017.
- (25) Incorporated by reference to the exhibits in the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018.
- (26) Incorporated by reference to the exhibits in the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
- (27) Incorporated by reference to the exhibits in the Company's Annual Report on Form 10-K for the year ended December 31, 2016.
- (28) Incorporated by reference to the exhibits in the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019.
- (29) Incorporated by reference to the exhibits in the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019.
- (30) Incorporated by reference to the exhibits in the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized on February 24, 2020.

ATLAS AIR WORLDWIDE HOLDINGS, INC.
(Registrant)

By: /s/ John W. Dietrich
John W. Dietrich
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on February 24, 2020 on behalf of the Registrant and in the capacities indicated.

Signature	Capacity
*/s/ William J. Flynn William J. Flynn	Chairman of the Board
/s/ John W. Dietrich John W. Dietrich	President, Chief Executive Officer and Director (Principal Executive Officer)
/s/ Spencer Schwartz Spencer Schwartz	Executive Vice President and Chief Financial Officer (Principal Financial Officer)
/s/ Keith H. Mayer Keith H. Mayer	Senior Vice President, Chief Accounting Officer and Corporate Controller (Principal Accounting Officer)
* Timothy J. Bernlohr Timothy J. Bernlohr	Director
* Charles F. Bolden, Jr. Charles F. Bolden, Jr.	Director
* Bobby J. Griffin Bobby J. Griffin	Director
* Carol B. Hallett Carol B. Hallett	Director
* Jane H. Lute Jane H. Lute	Director
* Duncan J. McNabb Duncan J. McNabb	Director
* Sheila A. Stamps Sheila A. Stamps	Director
* John K. Wulff John K. Wulff	Director
*By: <u>/s/ John W. Dietrich</u> John W. Dietrich, as Attorney-in-fact for each of the persons indicated	

Corporate Information

Board of Directors

William J. Flynn

Chairman of the Board,
Atlas Air Worldwide
Holdings, Inc.

President & Chief
Executive Officer,
Amtrak

Duncan J. McNabb

Lead Independent Director,
Atlas Air Worldwide
Holdings, Inc.

Former Commander,
United States
Transportation Command
General, Retired,
United States Air Force

Timothy J. Bernlohr

Managing Member,
TJB Management
Consulting, LLC

Charles F. Bolden, Jr.

Former Administrator,
National Aeronautics and
Space Administration

Major General, Retired,
United States Marine
Corps

Bobby J. Griffin

Former President,
International Operations,
Ryder System, Inc.

John W. Dietrich

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

Carol B. Hallett

Of Counsel,
U.S. Chamber
of Commerce

Jane H. Lute

President & CEO,
SICPA North America

Sheila A. Stamps

Former Executive
Vice President,
Dreambuilder
Investments, LLC
Senior Banking Executive

John K. Wulff

Former Chairman,
Hercules Incorporated

Former Chief
Financial Officer,
Union Carbide
Corporation

Executive Management

John W. Dietrich

President & Chief Executive Officer

James A. Forbes

Executive Vice President & Chief Operating Officer

Michael T. Steen

Executive Vice President & Chief Commercial Officer

President & Chief Executive Officer,
Titan Aviation Holdings, Inc.

Adam R. Kokas

Executive Vice President, General Counsel
& Secretary

Spencer Schwartz

Executive Vice President & Chief Financial Officer

Patricia Goodwin-Peters

Senior Vice President Human Resources

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

Stock Transfer Agent

Computershare
P.O. Box 505008
Louisville, KY 40233-9814

Telephone: 1-800-368-5948

[Inside U.S., U.S. territories & Canada]

Telephone: 1-201-680-6578

[Outside U.S., U.S. territories & Canada]

www.computershare.com/investor

Independent Accountants

PricewaterhouseCoopers LLP
New York, New York

Website

www.atlasairworldwide.com

Investor Information

Securities analysts and investors may write to Investor
Relations at the Corporate Office, call 1-914-701-8926,
or email InvestorRelations@atlasair.com.

Partnering With the Best



and many more



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