

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORP
Form 10-K
February 27, 2019

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K

ý Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the fiscal year ended December 31, 2018

OR

Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the transition period from _____ to _____

Commission file number 033-90866

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION

(Exact name of registrant as specified in its charter)

Delaware 25-1615902
(State or other jurisdiction of (IRS Employer
incorporation or organization) Identification No.)

1001 Air Brake Avenue (412) 825-1000
Wilmerding, Pennsylvania 15148
(Address of principal executive offices, including zip code) (Registrant's telephone number)
Securities registered pursuant to Section 12(b) of the Act:

Title of Class	Name of Exchange on which registered
Common Stock, par value \$.01 per share	New York Stock Exchange

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 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files) Yes No .

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. .

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

Large accelerated filer Accelerated filer Non-accelerated filer

Emerging growth company Smaller reporting 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 ý.

The registrant estimates that as of June 30, 2018, the aggregate market value of the voting shares held by non-affiliates of the registrant was approximately \$8.5 billion based on the closing price on the New York Stock Exchange for such stock.

As of February 20, 2019, 96,613,310 shares of Common Stock of the registrant were issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the Proxy Statement for the registrant's Annual Meeting of Stockholders to be held on May 17, 2019 are incorporated by reference into Part III of this Form 10-K.

TABLE OF CONTENTS

	Page
PART I	
Item 1. <u>Business</u>	<u>3</u>
Item 1A. <u>Risk Factors</u>	<u>11</u>
Item 1B. <u>Unresolved Staff Comments</u>	<u>18</u>
Item 2. <u>Properties</u>	<u>19</u>
Item 3. <u>Legal Proceedings</u>	<u>20</u>
Item 4. <u>Mine Safety Disclosures</u>	<u>20</u>
<u>Executive Officers of the Registrant</u>	<u>21</u>
PART II	
Item 5. <u>Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	<u>23</u>
Item 6. <u>Selected Financial Data</u>	<u>24</u>
Item 7. <u>Management’s Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>25</u>
Item 7A. <u>Quantitative and Qualitative Disclosures About Market Risk</u>	<u>44</u>
Item 8. <u>Financial Statements and Supplementary Data</u>	<u>44</u>
Item 9. <u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	<u>44</u>
Item 9A. <u>Controls and Procedures</u>	<u>44</u>
Item 9B. <u>Other Information</u>	<u>45</u>
PART III	
Item 10. <u>Directors, Executive Officers and Corporate Governance</u>	<u>46</u>
Item 11. <u>Executive Compensation</u>	<u>46</u>
Item 12. <u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	<u>46</u>
Item 13. <u>Certain Relationships and Related Transactions, and Director Independence</u>	<u>46</u>
Item 14. <u>Principal Accountant Fees and Services</u>	<u>46</u>
PART IV	
Item 15. <u>Exhibits and Financial Statement Schedules</u>	<u>47</u>
Item 16. <u>Form 10-K Summary</u>	<u>102</u>

PART I

Item 1. BUSINESS

General

Westinghouse Air Brake Technologies Corporation, doing business as Wabtec Corporation, is a Delaware corporation with headquarters at 1001 Air Brake Avenue in Wilmerding, Pennsylvania. Our telephone number is 412-825-1000, and our website is located at www.wabtec.com. All references to “we”, “our”, “us”, the “Company” and “Wabtec” refer to Westinghouse Air Brake Technologies Corporation and its consolidated subsidiaries. George Westinghouse founded the original Westinghouse Air Brake Co. in 1869 when he invented the air brake. Westinghouse Air Brake Company (“WABCO”) was formed in 1990 when it acquired certain assets and operations from American Standard, Inc., now known as Trane (“Trane”). The company went public on the New York Stock Exchange in 1995. In 1999, WABCO merged with MotivePower Industries, Inc. and adopted the name Wabtec.

On May 20, 2018, the Company entered into a transaction that resulted in the merger of Wabtec and GE Transportation, a business unit of General Electric Company. The merger of Wabtec and GE Transportation was completed on February 25, 2019. To effect the transaction, the Company entered into an Agreement and Plan of Merger (the “Merger Agreement”) with General Electric Company (“GE”), Transportation Systems Holdings Inc. (“SpinCo”), which was a newly formed wholly owned subsidiary of GE, and Wabtec US Rail Holdings, Inc. (“Merger Sub”), which is a newly formed wholly owned subsidiary of the Company. In addition, on May 20, 2018, GE, SpinCo, the Company and Wabtec US Rail Holdings, Inc. (“Direct Sale Purchaser”), entered into the Separation, Distribution and Sale Agreement (the “Separation Agreement”). Together, the Merger Agreement and the Separation Agreement provided for the combination of the Company and GE’s realigned transportation business (“GE Transportation”). GE Transportation (www.getransportation.com) is a global technology leader and supplier of locomotives, equipment, services and digital solutions to the rail, mining, marine, stationary power and drilling industries. GE Transportation employs approximately 9,000 employees worldwide and had 2018 sales of about \$3.9 billion. Wabtec expects the transactions to have the following strategic benefits:

Increased Scale and Diversification of Wabtec’s Product Portfolio. As a result of the Transactions, Wabtec expects the combined business to be one of the world’s largest providers of technology-enabled equipment, systems and services for the locomotive, freight and passenger rail industries with approximately \$8.0 billion in revenue and 25,000 employees in 52 countries.

Complementary Digital Technologies. GE Transportation will contribute a comprehensive digital portfolio and leading engineering and technical intellectual property to Wabtec, providing electronics and digital technologies that position the combined company to meet growing demand for train intelligence and network optimization.

Enhanced Aftermarket and Services Opportunities. The combined entity will have an installed base of more than 23,000 locomotives and content on virtually all North American locomotives and freight cars, which enables significant opportunities in the high-margin aftermarket parts and services business and mitigates the combined company’s exposure to cycles.

Significant Operating Synergies. The consummation of the transactions is expected to generate \$250 million annual run-rate operating synergies, driven by cost and revenue opportunities, within four years after closing.

Improved Financial Profile. The consummation of the transactions will enhance Wabtec’s margins and revenue growth opportunities with strong free cash flow generation to enable strategic deleveraging through debt reduction and earnings growth.

In 2017, Wabtec completed the acquisition of Faiveley Transport, S.A. (“Faiveley Transport”), a leading provider of value-added, integrated systems and services, primarily for the global transit rail market, for a purchase price of approximately \$1.5 billion. Based in France, Faiveley Transport has roots to 1919 and became a leader in manufacturing pantographs, automatic door mechanisms and air conditioning systems. Faiveley Transport was listed on the Paris Stock Exchange in 1994 and during the next 20 years acquired a number of rail industry leaders including Sab Wabco, a specialist in railway braking systems and couplers. Wabtec believes that the acquisition of Faiveley Transport provided the following strategic benefits:

Increased diversity of revenues by product, geography and market. A majority of Faiveley Transport’s revenues are outside the U.S. and in the transit market, which helps to balance the cyclicity of our North American freight business.

• Broadened product line. Faiveley Transport provides many products that we did not previously offer, including braking and door systems for high-speed trains and air conditioning systems.

• Expanded international presence in the transit market. A majority of Faiveley Transport's revenues come from transit markets outside the U.S., where we previously did not have a strong presence.

Increased technical and engineering expertise. Faiveley Transport strengthens Wabtec's technical capabilities and product development efforts.

Today, we are one of the world's largest providers of value-added, technology-based equipment, systems and services for the global passenger transit and freight rail industries. We believe we hold a leading market share for many of our core product lines globally. Our highly engineered products, which are intended to enhance safety, improve productivity and reduce maintenance costs for customers, can be found on most locomotives, freight cars, passenger transit cars and buses around the world. In 2018, the Company had sales of approximately \$4.4 billion and net income attributable to our shareholders of about \$294.9 million. In 2018, sales of aftermarket parts and services represented about 57% of total sales, while sales to customers outside of the U.S. accounted for about 67% of total sales.

Industry Overview

The Company primarily serves the global passenger transit and freight rail industries. As such, our operating results are largely dependent on the level of activity, financial condition and capital spending plans of passenger transit agencies and freight railroads around the world, and transportation equipment manufacturers who serve those markets. Many factors influence these industries, including general economic conditions; traffic volumes, as measured by freight carloadings and passenger ridership; government spending on public transportation; and investment in new technologies. In general, trends such as increasing urbanization and growth in developing markets, a focus on sustainability and environmental awareness, increasing investment in technology solutions, an aging equipment fleet, and growth in global trade are expected to drive continued investment in passenger transit and freight rail.

According to the 2018 bi-annual edition of a market study by UNIFE, the Association of the European Rail Industry, the accessible global market for railway products and services was more than \$100 billion and was expected to grow at a compounded annual growth rate of 2.6% through 2023. The three largest geographic markets, which represented about 80% of the total accessible market, were Europe, North America and Asia Pacific. UNIFE projected above-average growth rates in North America, Latin America and Africa/Middle East, with Asia Pacific and Europe growing at about the industry average. UNIFE said trends such as urbanization and increasing mobility, deregulation, investments in new technologies, energy and environmental issues, and increasing government support continue to drive investment. The largest product segments of the market were rolling stock, services and infrastructure, which represent almost 90% of the accessible market. UNIFE projected spending on turnkey management projects and infrastructure to grow at above-average rates. UNIFE estimated that the global installed base of locomotives was about 114,000 units, with about 33% in Asia Pacific, about 26% in North America and about 18% in Russia-CIS (Commonwealth of Independent States). Wabtec estimates that about 2,500 new locomotives were delivered worldwide in 2018, and we expect deliveries of about 2,900 in 2019. UNIFE estimated the global installed base of freight cars was about 5.1 million, with about 33% in North America, about 26% in Asia Pacific and about 24% in Russia-CIS. Wabtec estimates that about 175,000 new freight cars were delivered worldwide in 2018, and we expect deliveries of about 174,000 in 2019. UNIFE estimated the global installed base of passenger transit vehicles to be about 600,000 units, with about 45% in Asia Pacific, about 33% in Europe and about 12% in Russia-CIS. Wabtec estimates that about 30,000 new passenger transit vehicles were ordered worldwide in 2018, and we expect orders of about the same number in 2019.

In Europe, the majority of the rail system serves the passenger transit market, which is expected to continue growing as energy and environmental factors encourage continued investment in public mass transit. According to UNIFE, France, Germany and the United Kingdom were the largest Western European transit markets, representing almost two-thirds of industry spending in the European Union. UNIFE projected the accessible Western European rail market to grow at about 2.3% annually, led by investments in new rolling stock in France and Germany. About 75% of freight traffic in Europe is hauled by truck, while rail accounts for about 20%. The largest freight markets in Europe are Germany, Poland and the United Kingdom. In recent years, the European Commission has adopted a series of measures designed to increase the efficiency of the European rail network by standardizing operating rules and certification requirements. UNIFE believes that adoption of these measures should have a positive effect on ridership and investment in public transportation over time.

In North America, railroads carry about 40% of intercity freight, as measured by ton-miles, which is more than any other mode of transportation. Through direct ownership and operating partnerships, U.S. railroads are part of an integrated network that includes railroads in Canada and Mexico, forming what is regarded as the world's

most-efficient and lowest-cost freight rail service. There are more than 500 railroads operating in North America, with the largest railroads, referred to as “Class I,” accounting for more than 90% of the industry’s revenues. The railroads carry a wide variety of commodities and goods, including coal, metals, minerals, chemicals, grain, and petroleum. These commodities represent about 50% of total rail carloadings, with intermodal carloads accounting for the rest. Railroads operate in a competitive environment, especially with the trucking industry, and are always seeking ways to improve safety, cost and reliability. New technologies offered by Wabtec and others in the industry can provide some of these benefits. Demand for our freight related products and services in North America is driven by a number of factors, including rail traffic, and production of new locomotives and new freight cars. In the U.S., the passenger transit industry is dependent largely on funding from federal, state and local governments, and from fare

box revenues. Demand for North American passenger transit products is driven by a number of factors, including government funding, deliveries of new subway cars and buses, and ridership. The U.S. federal government provides money to local transit authorities, primarily to fund the purchase of new equipment and infrastructure for their transit systems.

Growth in the Asia Pacific market has been driven mainly by the continued urbanization of China and India, and by investments in freight rail rolling stock and infrastructure in Australia to serve its mining and natural resources markets. India is making significant investments in rolling stock and infrastructure to modernize its rail system; for example, the country has awarded a 1,000-unit locomotive order to GE Transportation

Other key geographic markets include Russia-CIS and Africa-Middle East. With about 1.2 million freight cars and about 20,000 locomotives, Russia-CIS is among the largest freight rail markets in the world, and it's expected to invest in both freight and transit rolling stock. PRASA, the Passenger Rail Agency of South Africa, is expected to continue to invest in new transit cars and new locomotives. According to UNIFE, emerging markets were expected to grow at above-average rates as global trade led to increased freight volumes and urbanization led to increased demand for efficient mass-transportation systems. As this growth occurs, Wabtec expects to have additional opportunities to provide products and services in these markets.

In its study, UNIFE also said it expected increased investment in digital tools for data and asset management, and in rail control technologies, both of which would improve efficiency in the global rail industry. UNIFE said data-driven asset management tools have the potential to reduce equipment maintenance costs and improve asset utilization, while rail control technologies have been focused on increasing track capacity, improving operational efficiency and ensuring safer railway traffic. Wabtec offers products and services to help customers make ongoing investments in these initiatives.

Business Segments and Products

We provide our products and services through two principal business segments, the Transit Segment and the Freight Segment, both of which have different market characteristics and business drivers. The acquisition of Faiveley Transport significantly strengthened our capabilities and presence in the worldwide transit market.

The Transit Segment primarily manufactures and services components for new and existing passenger transit vehicles, typically regional trains, high speed trains, subway cars, light-rail vehicles and buses; supplies rail control and infrastructure products including electronics, positive train control equipment, and signal design and engineering services; builds new commuter locomotives; and refurbishes passenger transit vehicles. Customers include public transit authorities and municipalities, leasing companies, and manufacturers of passenger transit vehicles and buses around the world. Demand in the transit market is primarily driven by general economic conditions, passenger ridership levels, government spending on public transportation, and investment in new rolling stock. In 2018, the Transit Segment accounted for 64% of our total sales, with about 22% of its sales in the U.S. Approximately two-thirds of the Transit Segment's sales are in the aftermarket with the remainder in the original equipment market. The addition of Faiveley Transport's key products strengthened Wabtec's presence in the following areas: high-speed braking and door systems; heating, ventilation and air conditioning systems; pantographs and power collection; information systems; platform screen doors and gates; couplers; and aftermarket services, maintenance and spare parts. Geographically, Faiveley Transport significantly strengthened Wabtec's presence in the European and Asia Pacific transit markets.

The Freight Segment primarily manufactures and services components for new and existing locomotives and freight cars; supplies rail control and infrastructure products including electronics, positive train control equipment, and signal design and engineering services; overhauls locomotives; and provides heat exchangers and cooling systems for rail and other industrial markets. Customers include large, publicly traded railroads, leasing companies, manufacturers of original equipment such as locomotives and freight cars, and utilities. Demand is primarily driven by general economic conditions and industrial activity; traffic volumes, as measured by freight carloadings; investment in new technologies; and deliveries of new locomotives and freight cars. In 2018, the Freight Segment accounted for 36% of our total sales, with about 54% of its sales in the U.S. In 2018, slightly more than half of the Freight Segment's sales were in the aftermarket.

Following is a summary of our leading product lines in both aftermarket and original equipment across both of our business segments in 2018:

Specialty Products & Electronics:

Positive Train Control equipment and electronically controlled pneumatic braking products

Railway electronics, including event recorders, monitoring equipment and end of train devices

Signal design and engineering services

Freight car trucks and couplers

5

• Draft gears, couplers and slack adjusters

• Air compressors and dryers

• Heat exchangers and cooling products for locomotives and power generation equipment

• Track and switch products

Brake Products:

• Railway braking equipment and related components for Freight and Transit applications, including high-speed passenger transit vehicles

• Friction products, including brake shoes, discs and pads

Remanufacturing, Overhaul and Build:

• New commuter and switcher locomotives

• Transit car and locomotive overhaul and refurbishment

Transit Products:

• Heating, ventilation and air conditioning equipment

• Doors for buses and subway cars

• Platform screen doors

• Pantographs

• Window assemblies

• Couplers

• Accessibility lifts and ramps for buses and subway cars

• Traction motors

We believe we have become a leader in the passenger transit and freight rail industries by capitalizing on the strength of our existing products, technological capabilities and new product innovations, and by our ability to harden products to protect them from severe conditions, including extreme temperatures and high-vibration environments. Supported by our technical staff of more than 2,500 engineers and specialists, we have extensive experience in a broad range of product lines, which enables us to provide comprehensive, systems-based solutions for our customers.

In recent years, we have introduced a number of significant new products, including Positive Train Control (“PTC”) equipment that encompasses onboard digital data and global positioning communication protocols. We are making additional investments in this technology which we believe will provide customers with opportunities to improve safety and efficiency, in part through data analytics solutions. Other new products include HVAC inverter integrated solutions, brake discs and brake controls, platform doors and gates, and door controllers.

For additional information on our business segments, see Note 22 of “Notes to Consolidated Financial Statements” included in Part IV, Item 15 of this report.

Competitive Strengths

Our key strengths include:

Leading market positions in core products. Dating back to 1869 and George Westinghouse’s invention of the air brake, we are an established leader in the development and manufacture of pneumatic braking equipment for freight and passenger transit vehicles. Faiveley Transport, founded 100 years ago, has a long history and is a market leader for its core products, including pantographs, automatic door mechanisms and air conditioning systems. We have leveraged our leading positions by focusing on research and engineering to expand beyond pneumatic braking components to supplying integrated parts and assemblies for the locomotive through the end of the train. We are a recognized leader in the development and production of electronic recording, measuring and communications systems, positive train control equipment, highly engineered compressors and heat exchangers for locomotives, and a leading manufacturer of freight car components, including electronic braking equipment, draft gears, trucks, brake shoes and electronic end-of-train devices. We are also a leading provider of braking equipment; heating, ventilation and air conditioning equipment; door assemblies and platform screen doors; lifts and ramps; couplers and current collection equipment, such as pantographs, for passenger transit vehicles.

Breadth of product offering with a stable mix of original equipment market (OEM) and aftermarket business. Our product portfolio is one of the broadest in the rail industry, as we offer a wide selection of quality parts, components and assemblies across the entire train and worldwide. We provide our products in both the original equipment market and the aftermarket. Our substantial installed base of products with end-users such as the railroads and the passenger transit authorities is a significant competitive advantage for providing products and services to the aftermarket because these customers often look to purchase safety- and performance-related replacement parts from the original equipment components supplier. In addition, as OEMs and railroad operators attempt to modernize fleets with new products designed to improve and maintain safety and efficiency, these products must be designed to be interoperable with existing equipment. On average, over the last several years, about 58% of our total net sales have come from our aftermarket products and services business.

Leading design and engineering capabilities. We believe a hallmark of our relationship with our customers has been our leading design and engineering practice, which has assisted in the improvement and modernization of global railway equipment. We believe both our customers and the government authorities value our technological capabilities and commitment to innovation, as we seek not only to enhance the efficiency and profitability of our customers, but also to improve the overall safety of the railways through continuous improvement of product performance. The Company has an established record of product improvements and new product development. We have assembled a wide range of patented products, which we believe provides us with a competitive advantage. Wabtec currently owns 3,333 active patents worldwide. During the last three years, we have filed for approximately 443 patents worldwide in support of our new and evolving product lines.

Experience with industry regulatory requirements. The freight rail and passenger transit industries are governed by various government agencies and regulators in each country and region. These groups mandate rigorous manufacturer certification, new product testing and approval processes that we believe are difficult for new entrants to meet cost-effectively and efficiently without the scale and extensive experience we possess. Certification processes are lengthy, and often require local presence and expertise. In addition, each transit agency places a high degree of importance on vehicle customization, which requires experience and technical expertise to meet ever-evolving specifications.

Experienced management team and the Wabtec Excellence Program (WEP) Wabtec's lean manufacturing and continuous improvement initiatives, known as the Wabtec Excellence Program, have been a part of the Company's culture for more than 25 years and have enabled Wabtec to manage successfully through cycles in the rail supply market. We believe that, over time, the application of WEP initiatives has resulted in a reduced cost structure and standardized excellence in all processes. We believe that using WEP as our operational foundation will foster state-of-the-art processes and continuous improvement, promote a constant pursuit of quality, and drive practical innovations and best-in-class, modern manufacturing.

Business strategy

Using WEP, we strive to generate sufficient cash to invest in our growth strategies and to build on what we consider to be a leading position as a low-cost producer in the industry while maintaining world-class product quality, technology and customer responsiveness. Through WEP and employee-directed initiatives such as Kaizen, a Japanese-developed team concept, we continuously strive to improve quality, delivery and productivity, and to reduce costs utilizing global sourcing and supply chain management. These practices enable us to streamline processes, improve product reliability and customer satisfaction, reduce product cycle times and respond more rapidly to market developments. We also rely on functional experts within the Company across various disciplines to train, coach and share best practices throughout the corporation, while benchmarking against best-in-class competitors and peers. Over time, we believe the principles of WEP will enable us to continue to increase operating margins, improve cash flow and strengthen our ability to invest in the following growth strategies:

Product innovation and new technologies. We continue to emphasize innovation and development funding to create new products and capabilities, such as vehicle monitoring and data analytics. WabtecONE is a multi-year initiative to build on our existing expertise and technologies in electronics. In addition, we invest in developing enhancements and new features to existing products, such as brake discs and heat exchangers. We are focusing on technological advances, especially in the areas of electronics, braking products and other on-board equipment, as a means to deliver new product growth. We seek to provide customers with incremental technological advances that offer immediate

benefits with cost-effective investments.

Global and market expansion. We believe that international markets represent a significant opportunity for future growth. In 2018, sales to non-U.S. customers were approximately \$2.9 billion. We intend to increase international sales through direct sales of existing products to current and new customers, by developing specific new products for application in new geographic markets, by making strategic acquisitions, and through joint ventures with railway suppliers which have a strong presence in their local markets. In transit, we are focused on mature markets such as Europe and emerging markets such as India. In freight, we are targeting markets that operate significant fleets of U.S.-

7

style locomotives and freight cars, including Australia, Brazil, China, India, Russia, South Africa, and other select areas within Europe and South America. In addition, we have opportunities to increase the sale of certain products that we currently manufacture for the rail industry into other industrial markets, such as mining, off-highway and energy. These products include heat exchangers and friction materials.

Aftermarket products and services. Historically, aftermarket sales are less cyclical than OEM sales because a certain level of aftermarket maintenance and service work must be performed, even during an industry slowdown. In 2018, Wabtec's aftermarket sales and services represented approximately 57% of the Company's total sales across both of our business segments. As a long time supplier of original equipment, we have an extensive installed base of equipment in the field, which generates recurring aftermarket sales. Wabtec provides aftermarket parts and services for its components, and we seek to expand this business with customers who currently perform the work in-house. In this way, we expect to benefit as transit authorities and railroads outsource certain maintenance and overhaul functions.

Acquisitions, joint ventures and alliances. We continue to invest in acquisitions, joint ventures and alliances using a disciplined, selective approach and rigorous financial criteria. These transactions are expected to meet our financial criteria and contribute to growth strategies of product innovation and new technologies, global expansion, and aftermarket products and services. We believe these expansion strategies will help Wabtec to grow profitably, expand geographically, and dampen the impact from potential cycles in the North American freight rail industry.

Recent Acquisitions and Joint Ventures

See Note 3 of the Notes to Consolidated Financial Statements

Backlog

The Company's backlog was about \$4.5 billion at December 31, 2018. For 2018, about 57% of total sales came from aftermarket orders, which typically carry lead times of less than 30 days and are not recorded in backlog for a significant period of time.

The Company's contracts are subject to standard industry cancellation provisions, including cancellations on short notice or upon completion of designated stages. Generally, if a customer were to cancel a contract we would have an enforceable right to payment for work completed up to the date of cancellation which would include a reasonable profit margin. Substantial scope-of-work adjustments are common. For these and other reasons, completion of the Company's backlog may be delayed or canceled. The railroad industry, in general, has historically been subject to fluctuations due to overall economic conditions and the level of use of alternative modes of transportation.

The backlog of firm customer orders as of December 31, 2018 and December 31, 2017, and the expected year of completion are as follows:

	Total Backlog	Expected Delivery 2019	Other Years	Total Backlog	Expected Delivery 2018	Other Years
In thousands	12/31/2018	2019	Years	12/31/2017	2018	Years
Freight Segment	\$664,657	\$503,528	\$161,129	\$549,188	\$423,805	\$125,383
Transit Segment	3,816,925	1,954,573	1,862,352	4,050,460	1,891,079	2,159,381
Total	\$4,481,582	\$2,458,101	\$2,023,481	\$4,599,648	\$2,314,884	\$2,284,764

Engineering and Development

To execute our strategy to develop new products, we invest in a variety of engineering and development activities. For the fiscal years ended December 31, 2018, 2017 and 2016, we invested about \$87.5 million, \$95.2 million and \$71.4 million, respectively, on product development and improvement activities. The engineering resources of the Company are allocated between research and development activities and the execution of original equipment customer contracts. Across the corporation we have established multiple Centers of Competence, which have specialized, technical expertise in various disciplines and product areas.

Our engineering and development program includes investments in data analytics, train control and other new technologies, with an emphasis on developing products that enhance safety, productivity and efficiency for our customers. For example, we have developed advanced cooling systems that enable lower emissions from diesel engines used in rail and other industrial markets. Sometimes we conduct specific research projects in conjunction with universities, customers and other industry suppliers.

We use our Product Development System to develop and monitor new product programs. The system requires the product development team to follow consistent steps throughout the development process, from concept to launch, to

ensure the product will meet customer expectations and internal profitability targets.

8

Positive Train Control ("PTC")

PTC is a collision-avoidance system that uses GPS to monitor and control the movement of passenger and freight trains. In 2008, the U.S. mandated the use of PTC on a majority of the locomotives and track in the U.S. The Federal Railroad Administration (the "FRA") eventually approved the use of Wabtec's Electronic Train Management System® as the on-board locomotive standard for the deployment of this technology. Our system includes an on-board locomotive computer and related software. The deadline to implement this technology was December 31, 2018, and we worked with the U.S. Class I railroads, commuter rail authorities and other industry suppliers to meet this deadline. Under certain conditions, the deadline could be extended through 2019 and 2020. In 2018, Wabtec recorded about \$395 million of revenue from freight and transit train control and signaling projects, which includes PTC.

Intellectual Property

We have 3,333 active patents worldwide and on average file for approximately 150 new patents each year. We also rely on a combination of trade secrets and other intellectual property laws, nondisclosure agreements and other protective measures to establish and protect our proprietary rights in our intellectual property. We also follow the product development practices of our competitors to monitor any possible patent infringement by them, and to evaluate their strategies and plans.

Certain trademarks, among them the name WABCO®, were acquired or licensed from American Standard Inc., now known as Trane, in 1990 at the time of our acquisition of the North American operations of the Railway Products Group of Trane. Other trademarks have been developed through the normal course of business or acquired as a part of our ongoing merger and acquisition program.

We have entered into a variety of license agreements as licensor and licensee. We do not believe that any single license agreement is of material importance to our business or either of our business segments as a whole.

We have issued licenses to the two sole suppliers of railway air brakes and related products in Japan, Nabtesco and Mitsubishi Electric Company. The licensees pay annual license fees to us and also assist us by acting as liaisons with key Japanese passenger transit vehicle builders for projects in North America. We believe that our relationships with these licensees are beneficial to our core transit business and customer relationships in North America.

Customers

We provide products and services for more than 500 customers worldwide. Our customers include passenger transit authorities and railroads throughout North America, Europe, Asia Pacific, South Africa and South America; manufacturers of transportation equipment, such as locomotives, freight cars, passenger transit vehicles and buses; and companies that lease and maintain such equipment.

Top customers can change from year to year. For the fiscal year ended December 31, 2018, our top five customers accounted for approximately 15% of net sales: Bombardier, Inc., Alstom, the Greenbrier Companies, Indian Railways and Trinity Industries. No one customer represents 10% or more of consolidated sales. We believe that we have strong relationships with all of our key customers.

Competition

We believe we hold a leading market share for many of our core product lines globally, although market shares vary by product lines and geographies. We operate in a highly competitive marketplace. Price competition is strong because we have a relatively small number of customers and they are very cost-conscious. In addition to price, competition is based on product performance and technological leadership, quality, reliability of delivery, and customer service and support.

Our principal competitors vary across product lines and geographies. Within North America, New York Air Brake Company, a subsidiary of the German air brake producer Knorr-Bremse AG ("Knorr") and Amsted Rail Company, Inc., a subsidiary of Amsted Industries Corporation, are our principal overall OEM competitors. Our competition for locomotive, freight and passenger transit service and repair is mostly from the railroads' and passenger transit authorities' in-house operations, Electro-Motive Diesel, a division of Caterpillar, and New York Air Brake/Knorr. We believe our key strengths, which include leading market positions in core products, breadth of product offering with a stable mix of OEM and aftermarket business, leading design and engineering capabilities, significant barriers to entry and an experienced management team, enable us to compete effectively in this marketplace. Outside of North America, Knorr is our main competitor, although not in every product line or geography. In addition, our competitors

often include smaller, local suppliers in most international markets. Depending on the product line and geography, we can also compete with our customers, such as CRRC Corporation Limited, a China-based manufacturer of rolling stock.

Employees

At December 31, 2018, we employed approximately 18,000 full-time employees around the world. This figure includes employees subject to collective bargaining agreements, most of which are outside of North America. We consider our relations with employees and union representatives to be good but cannot assure that future contract negotiations and labor relations will be so.

Regulation

In the course of our operations, we are subject to various regulations and standards of governments and other agencies in the U.S. and around the world. These entities typically govern equipment, safety and interoperability standards for passenger transit and freight rail rolling stock, oversee a wide variety of rules and regulations governing safety and design of equipment, and evaluate certification and qualification requirements for suppliers. New products generally must undergo testing and approval processes that are rigorous and lengthy. As a result of these regulations and requirements, we must usually obtain and maintain certifications in a variety of jurisdictions and countries. The governing bodies include the FRA and the Association of American Railroads ("AAR") in the U.S., and the International Union of Railways ("UIC") and the European Railway Agencies in Europe. Also, in Europe, the European Committees for Standardization continually draft new European standards which cover, for example, the Reliability, Availability, Maintainability and Safety of railways systems. To guarantee interoperability in Europe, the European Union for Railway Agencies is responsible for defining and implementing Technical Standards of Interoperability, which covers areas such as infrastructure, energy, rolling stock, telematic applications, traffic operation and management subsystems, noise pollution and waste generation, protection against fire and smoke, and system safety. Most countries and regions in which Wabtec does business have similar rule-making bodies. In Russia, a GOST-R certificate of conformity is mandatory for all products related to the safety of individuals in Russian territory. In China, any product or system sold on the Chinese market must have been certified in accordance with national standards. In the local Indian market, most products are covered by regulations patterned after AAR and UIC standards.

Effects of Seasonality

Our business is not typically seasonal. The third quarter results may be affected by vacation and scheduled plant shutdowns at several of our major customers and fourth quarter results may be affected by the timing of spare parts and service orders placed by transit agencies worldwide. Quarterly results can also be affected by the timing of projects in backlog and by project delays.

Environmental Matters

Additional information on environmental matters is included in Note 21 of "Notes to Consolidated Financial Statements" included in Part IV, Item 15 of this report.

Available Information

We maintain a website at www.wabtec.com. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to such reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as well as the annual report to stockholders and other information, are available free of charge on this site. The Internet site and the information contained therein or connected thereto are not incorporated by reference into this Form 10-K. The following are also available free of charge on this site and are available in print to any shareholder who requests them: Our Corporate Governance Guidelines, the charters of our Audit, Compensation and Nominating and Corporate Governance Committees, our Code of Conduct, which is applicable to all employees, our Code of Ethics for Senior Officers, which is applicable to our executive officers, our Policies on Related Party Transactions and Conflict Minerals, and our Sustainability Report.

Item 1A. RISK FACTORS

Prolonged unfavorable economic and market conditions could adversely affect our business.

Unfavorable general economic and market conditions in the United States and internationally, particularly in our key end markets, could have a negative impact on our sales and operations. To the extent that these factors result in continued instability of capital markets, shortages of raw materials or component parts, longer sales cycles, deferral or delay of customer orders or an inability to market our products effectively, our business and results of operations could be materially adversely affected.

We are dependent upon key customers.

We rely on several key customers who represent a significant portion of our business. While we believe our relationships with our customers are generally good, our top customers could choose to reduce or terminate their relationships with us. In addition, many of our customers place orders for products on an as-needed basis and operate in cyclical industries. As a result, customer order levels have varied from period to period in the past and may vary significantly in the future. Such customer orders are dependent upon their markets and customers and may be subject to delays and cancellations. Furthermore, the average service life of certain products in our end markets has increased in recent years due to innovations in technologies and manufacturing processes, which has also allowed end users to replace parts less often. As a result of our dependence on our key customers, we could experience a material adverse effect on our business, results of operations and financial condition if we lost any one or more of our key customers or if there is a reduction in their demand for our products.

Our business operates in a highly competitive industry.

We operate in a global, competitive marketplace and face substantial competition from a limited number of established competitors, some of which may have greater financial resources than we do, may have a more extensive low-cost sourcing strategy and presence in low-cost regions than we do or may receive significant governmental support. Price competition is strong and, coupled with the existence of a number of cost conscious customers with significant negotiating power, has historically limited our ability to increase prices. In addition to price, competition is based on product performance and technological leadership, quality, reliability of delivery and customer service and support. If our competitors invest heavily in innovation and develop products that are more efficient or effective than our products, we may not be able to compete effectively. There can be no assurance that competition in one or more of our markets will not adversely affect us and our results of operations.

We intend to pursue acquisitions, joint ventures and alliances that involve a number of inherent risks, any of which may cause us not to realize anticipated benefits.

One aspect of our business strategy is to selectively pursue acquisitions, joint ventures and alliances that we believe will improve our market position and provide opportunities to realize operating synergies. These transactions involve inherent risks and uncertainties, any one of which could have a material adverse effect on our business, results of operations and financial condition including:

- difficulties in achieving identified financial and operating synergies, including the integration of operations, services and products;
- diversion of management's attention from other business concerns;
- the assumption of unknown liabilities; and
- unanticipated changes in the market conditions, business and economic factors affecting such an acquisition, joint venture or alliance.

We cannot assure that we will be able to consummate any future acquisitions, joint ventures or other business combinations. If we are unable to identify or consummate suitable acquisitions, joint ventures or alliances, we may be unable to fully implement our business strategy, and our business and results of operations may be adversely affected as a result. In addition, our ability to engage in such strategic transactions will be dependent on our ability to raise substantial capital, and we may not be able to raise the funds necessary to implement this strategy on terms satisfactory to us, if at all.

A failure to predict and react to customer demand could adversely affect our business.

If we are unable to accurately forecast demand for our existing products or to react appropriately to changes in demand, we may experience delayed product shipments and customer dissatisfaction. If demand increases significantly from current levels, both we and our suppliers may have difficulty meeting such demand, particularly if

such demand increases occur rapidly. Alternatively, we may carry excess inventory if demand for our products decreases below projected levels.

Additionally, we have dedicated significant resources to the development, manufacturing and marketing of new products. Decisions to develop and market new transportation products are typically made without firm indications of customer

acceptance. Moreover, by their nature, new products may require alteration of existing business methods or threaten to displace existing equipment in which our customers may have a substantial capital investment. There can be no assurance that any new products that we develop will gain widespread acceptance in the marketplace or that such products will be able to compete successfully with other new products or services that may be introduced by competitors. Furthermore, we may incur additional warranty or other costs as new products are tested and used by customers.

Failure to accurately predict and react to customer demand could have a material adverse effect on our business, results of operations and financial condition.

We may fail to respond adequately or in a timely manner to innovative changes in new technology.

In recent years, the global transportation landscape has been characterized by rapid changes in technology, leading to innovative transportation and logistics concepts that could change the way the railway industry does business. There may be additional innovations impacting the railway industry that we cannot yet foresee. Any failure by us to quickly adapt to and adopt new innovations in products and processes desired by our customers may result in a significant loss of demand for our product and service offerings. In addition, advances in technology may require us to increase investments in order to remain competitive, and our customers may not be willing to accept higher prices to cover the cost of these investments.

A portion of our sales are related to delivering products and services to help our U.S. railroad and transit customers meet the Positive Train Control ("PTC") mandate from the U.S. federal government, which requires the use of on-board locomotive computers and software by the end of 2018.

For the fiscal year ended December 31, 2018, we had sales of about \$395 million related to train control and signaling, which includes PTC. In 2015, the industry's PTC deadline was extended by three years through December 31, 2018, which also included the ability of railroads to request an additional two years for compliance with the approval of the Department of Transportation if certain parameters are met. This could change the timing of our revenues and could cause us to reassess the staffing, resources and assets deployed in delivering PTC services.

Our revenues are subject to cyclical variations in the railway and passenger transit markets and changes in government spending.

The railway industry historically has been subject to significant fluctuations due to overall economic conditions, the use of alternate methods of transportation and the levels of government spending on railway projects. In economic downturns, railroads have deferred, and may defer, certain expenditures in order to conserve cash in the short term. Reductions in freight traffic may reduce demand for our replacement products.

The passenger transit railroad industry is also cyclical and is influenced by a variety of factors. New passenger transit car orders vary from year to year and are influenced by a variety of factors, including major replacement programs, the construction or expansion of transit systems by transit authorities and the quality and cost of alternative modes of transportation. To the extent that future funding for proposed public projects is curtailed or withdrawn altogether as a result of changes in political, economic, fiscal or other conditions beyond our control, such projects may be delayed or cancelled, resulting in a potential loss of business for us, including transit aftermarket and new transit car orders.

There can be no assurance that economic conditions will be favorable or that there will not be significant fluctuations adversely affecting the industry as a whole and, as a result, us.

Our backlog is not necessarily indicative of the level of our future revenues.

Our backlog represents future production and estimated potential revenue attributable to firm contracts with, or written orders from, our customers for delivery in various periods. Instability in the global economy, negative conditions in the global credit markets, volatility in the industries that our products serve, changes in legislative policy, adverse changes in the financial condition of our customers, adverse changes in the availability of raw materials and supplies, or un-remedied contract breaches could possibly lead to contract termination or cancellations of orders in our backlog or request for deferred deliveries of our backlog orders, each of which could adversely affect our cash flows and results of operations.

A growing portion of our sales may be derived from our international operations, which exposes us to certain risks inherent in doing business on an international level.

For the fiscal year ended December 31, 2018, approximately 67% of our consolidated net sales were to customers outside of the United States. We intend to continue to expand our international operations, including in emerging

markets, in the future. Our global headquarters for the Transit group is located in France, and we conduct other international operations through a variety of wholly and majority-owned subsidiaries and joint ventures, including in Australia, Austria, Brazil, Canada,

China, Czech Republic, France, Germany, India, Italy, Macedonia, Mexico, the Netherlands, Poland, Russia, Spain, South Africa, Turkey, and the United Kingdom. As a result, we are subject to various risks, any one of which could have a material adverse effect on those operations and on our business as a whole, including:

- lack of complete operating control;
- lack of local business experience;
- currency exchange fluctuations and devaluations;
- restrictions on currency conversion or the transfer of funds or limitations on our ability to repatriate income or capital;
- the complexities of operating within multiple tax jurisdictions;
- foreign trade restrictions and exchange controls;
- adverse impacts of international trade policies, such as import quotas, capital controls or tariffs;
- difficulty enforcing agreements and intellectual property rights;
- the challenges of complying with complex and changing laws, regulations, and policies of foreign governments;
- the difficulties involved in staffing and managing widespread operations;
- the potential for nationalization of enterprises;
- economic, political and social instability; and
- possible terrorist attacks, conflicts and wars, including those against American interests.

Our exposure to the risks associated with international operations may intensify if our international operations expand in the future.

We may have liability arising from asbestos litigation.

Claims have been filed against us and certain of our affiliates in various jurisdictions across the United States by persons alleging bodily injury as a result of exposure to asbestos-containing products. Most of these claims have been made against our wholly owned subsidiary, Railroad Friction Products Corporation ("RFPC"), and are based on a product sold by RFPC prior to the time that we acquired any interest in RFPC.

Most of these claims, including all of the RFPC claims, are submitted to insurance carriers for defense and indemnity or to non-affiliated companies that have retained the liabilities for the asbestos-containing products at issue. We cannot, however, assure that all these claims will be fully covered by insurance or that the indemnitors or insurers will remain financially viable. Our ultimate legal and financial liability with respect to these claims, as is the case with most other pending litigation, cannot be estimated.

We are subject to a variety of laws and regulations, including anti-corruption laws, in various jurisdictions.

We are subject to various laws, rules and regulations administered by authorities in jurisdictions in which we do business, such as the anti-corruption laws of the U.S. Foreign Corrupt Practices Act, the French Law n° 2016-1691 (Sapin II) and the U.K. Bribery Act, relating to our business and our employees. We are also subject to other laws and regulations governing our international operations, including regulations administered by the U.S. Department of Commerce's Bureau of Industry and Security, the U.S. Department of Treasury's Office of Foreign Assets Control, and various non-U.S. government entities, including applicable export control regulations, economic sanctions on countries and persons, customs requirements, currency exchange regulations, and transfer pricing regulations. Despite our policies, procedures and compliance programs, our internal controls and compliance systems may not be able to protect us from prohibited acts willfully committed by our employees, agents or business partners that would violate such applicable laws and regulations. Any such improper acts could damage our reputation, subject us to civil or criminal judgments, fines or penalties, and could otherwise disrupt our business, and as a result, could materially adversely impact our business, results of operations and financial condition.

In addition, our manufacturing operations are subject to safety, operations, maintenance and mechanical standards, rules and regulations enforced by various federal and state agencies and industry organizations both domestically and internationally. Our business may be adversely impacted by new rules and regulations or changes to existing rules or regulations, which could require additional maintenance or substantial modification or refurbishment of certain of our products or could make such products obsolete or require them to be phased out prior to their useful lives. We are unable to predict what impact these or other regulatory changes may have, if any, on our business or the industry as a whole. We cannot assure that costs incurred to comply with any new standards or regulations will not be material to our business, results of operations and financial condition.

We are subject to a variety of environmental laws and regulations.

We are subject to a variety of increasingly stringent environmental laws and regulations governing discharges to air and water, substances in products, the handling, storage and disposal of hazardous or solid waste materials and the remediation of contamination associated with releases of hazardous substances. We have incurred, and will continue to incur, both operating and capital costs to comply with environmental laws and regulations, including costs associated with the clean-up and

investigation of some of our current and former properties and offsite disposal locations. We believe our operations currently comply in all material respects with all of the various environmental laws and regulations applicable to our business; however, there can be no assurance that environmental requirements will not change in the future or that we will not incur significant costs to comply with such requirements. Failure to comply with environmental laws and regulations could have significant consequences on our business and results of operations, including the imposition of substantial fines and sanctions for violations, injunctive relief (including requirements that we limit or cease operations at affected facilities), and reputational risk.

In addition, certain of our products are subject to extensive, and increasingly stringent, statutory and regulatory requirements governing, e.g., emissions and noise, including standards imposed by the U.S. Environmental Protection Agency, the European Union and other regulatory agencies around the world. We have made, and will continue to make, significant capital and research expenditures relating to compliance with these standards. The successful development and introduction of new and enhanced products in order to comply with new regulatory requirements are subject to other risks, such as delays in product development, cost over-runs and unanticipated technical and manufacturing difficulties. In addition to these risks, the nature and timing of government implementation and enforcement of these standards-particularly in emerging markets-are unpredictable and subject to change. Future climate change regulation could result in increased operating costs, affect the demand for our products or affect the ability of our critical suppliers to meet our needs.

We have followed the current debate over climate change and the related policy discussion and prospective legislation. We have reviewed the potential challenges for us that climate change policy and legislation may pose. Any such challenges are heavily dependent on the nature and degree of climate change legislation and the extent to which it applies to our industry. At this time, we cannot predict the ultimate impact of climate change and climate change legislation on our operations. Further, when or if these impacts may occur cannot be assessed until scientific analysis and legislative policy are more developed and specific legislative proposals begin to take shape. Any laws or regulations that may be adopted to restrict or reduce emissions of greenhouse gas could require us to incur increased operating costs and could have an adverse effect on demand for our products. In addition, the price and availability of certain of the raw materials that we use could vary in the future as a result of environmental laws and regulations affecting our suppliers. An increase in the price of our raw materials or a decline in their availability could adversely affect our operating margins or result in reduced demand for our products.

The occurrence of litigation in which we could be named as a defendant is unpredictable.

From time to time, we are subject to litigation or other commercial disputes and other legal and regulatory proceedings with respect to our business, customers, suppliers, creditors, stockholders, product liability, intellectual property infringement, warranty claims or environmental-related matters. Due to the inherent uncertainties of any litigation, commercial disputes or other legal or regulatory proceedings, we cannot accurately predict their ultimate outcome, including the outcome of any related appeals. We may incur significant expense to defend or otherwise address current or future claims. Any litigation, even a claim without merit, could result in substantial costs and diversion of resources and could have a material adverse effect on our business and results of operations. Although we maintain insurance policies for certain risks, we cannot make assurances that this insurance will be adequate to protect us from all material judgments and expenses related to potential future claims or that these levels of insurance will be available in the future at economical prices or at all.

If we are not able to protect our intellectual property and other proprietary rights, we may be adversely affected. Our success can be impacted by our ability to protect our intellectual property and other proprietary rights. We rely primarily on patents, trademarks, copyrights, trade secrets and unfair competition laws, as well as license agreements and other contractual provisions, to protect our intellectual property and other proprietary rights. However, filing, prosecuting and defending patents on our products in all countries and jurisdictions throughout the world would be prohibitively expensive. Moreover, existing U.S. legal standards relating to the validity, enforceability and scope of protection of intellectual property rights offer only limited protection, may not provide us with any competitive advantages and may be challenged by third parties. The laws of countries other than the United States may be even less protective of intellectual property rights. As a result, a significant portion of our technology is not patented, and we may be unable or may not seek to obtain patent protection for this technology. Further, although we routinely conduct anti-counterfeiting activities in multiple jurisdictions, we have encountered counterfeit reproductions of our

products or products that otherwise infringe on our intellectual property rights. Counterfeit components of low quality may negatively impact our brand value. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon, counterfeiting or misappropriating our intellectual property or otherwise gaining access to our technology. If we fail to protect our intellectual property and other proprietary rights, then our business, results of operations and financial condition could be negatively impacted.

In addition, we operate in industries in which there are many third-party owners of intellectual property rights. Owners of intellectual property that we need to conduct our business as it evolves may be unwilling to license such intellectual property rights to us on terms we consider reasonable. Third party intellectual property owners may assert infringement claims against us based on their intellectual property portfolios. If we are sued for intellectual property infringement, we may incur significant expenses investigating and defending such claims, even if we prevail. We face risks relating to cybersecurity attacks that could cause loss of confidential information and other business disruptions.

Threats to information technology systems associated with cybersecurity risks and cyber incidents or attacks continue to grow and our business is at risk from and may be impacted by cybersecurity attacks. We rely extensively on computer systems to process transactions and manage our business. In addition, we collect, process, and retain sensitive and confidential customer information in the normal course of business. Cybersecurity attacks could include attempts to gain unauthorized access to our data and computer systems. Attacks can be both individual and/or highly organized attempts by very sophisticated hacking organizations. We employ a number of measures to prevent, detect and mitigate these threats, which include employee education, password encryption, frequent password change events, firewall detection systems, anti-virus software in-place and frequent backups; however, there is no guarantee such efforts will be successful in preventing a cyber-attack. A cybersecurity attack could compromise the confidential information of our employees, customers and suppliers, and potentially violate certain domestic and international privacy laws. Furthermore, a cybersecurity attack on our customers and suppliers could compromise our confidential information in the possession of our customers and suppliers. A successful attack could disrupt and otherwise adversely affect our business operations, including through lawsuits by third-parties. In addition, the regulatory environment related to information security and privacy is constantly changing, and compliance with those requirements could result in additional costs.

Our manufacturer's warranties or product liability may expose us to potentially significant claims.

We warrant the workmanship and materials of many of our products. Accordingly, we are subject to a risk of product liability or warranty claims in the event that the failure of any of our products results in personal injury or death or does not conform to our customers' specifications. In addition, in recent years, we have introduced a number of new products for which we do not have a history of warranty experience. Although we currently maintain liability insurance coverage, we cannot assure that product liability claims, if made, would not exceed our insurance coverage limits or that insurance will continue to be available on commercially acceptable terms, if at all. The possibility exists for these types of warranty claims to result in costly product recalls, significant repair costs and damage to our reputation.

Labor shortages and labor disputes may have a material adverse effect on our operations and profitability.

We depend on skilled labor in our manufacturing and other businesses. Due to the competitive nature of the labor markets in which we operate, we may not be able to retain, recruit and train the personnel we require, particularly when the economy expands, production rates are high or competition for such skilled labor increases.

We collectively bargain with labor unions at some of our operations throughout the world. Failure to reach an agreement could result in strikes or other labor protests which could disrupt our operations. Furthermore, non-union employees in certain countries have the right to strike. If we were to experience a strike or work stoppage, it would be difficult for us to find a sufficient number of employees with the necessary skills to replace these employees. We cannot assure that we will reach any such agreement or that we will not encounter strikes or other types of conflicts with the labor unions of our personnel.

Any such labor shortages or labor disputes could have an adverse effect on our business, results of operations and financial condition, could cause us to lose revenues and customers and might have permanent effects on our business. Equipment failures, interruptions, delays in deliveries or extensive damage to our facilities, supply chains, distribution systems or information technology systems, could adversely affect our business.

All of our facilities, equipment, supply chains, distribution systems and information technology systems are subject to the risk of catastrophic loss due to unanticipated events, such as fires, earthquakes, explosions, floods, tornados, hurricanes or weather conditions. An interruption in our manufacturing capabilities, supply chains, distribution systems or information technology systems, whether as a result of such catastrophic loss or any other reason, could reduce, prevent or delay our production and shipment of our product offerings, result in defective products or services,

damage customer relationships and our reputation and result in legal exposure and large repair or replacement expenses. This could result in the delay or termination of orders, the loss of future sales and a negative impact to our reputation with our customers.

Third-party insurance coverage that we maintain with respect to such matters will vary from time to time in both type and amount depending on cost, availability and our decisions regarding risk retention, and may be unavailable or insufficient to

protect us against losses. Any of these risks coming to fruition could materially adversely affect our business, results of operations and financial condition.

We may be exposed to raw material shortages, supply shortages and fluctuations in raw material, energy and commodity prices.

We purchase energy, steel, aluminum, copper, rubber and rubber-based materials, chemicals, polymers and other key manufacturing inputs from outside sources, and traditionally have not had long-term pricing contracts with our pure raw material suppliers. The costs of these raw materials have been volatile historically and are influenced by factors that are outside our control. If we are unable to pass increases in the costs of our raw materials on to our customers, experience a lag in our ability to pass increases to our customers, or operational efficiencies are not achieved, our operating margins and results of operations may be materially adversely affected.

Our businesses compete globally for key production inputs. In addition, we rely upon third-party suppliers, including certain single-sourced suppliers, for various components for our products. In the event of a shortage or discontinuation of certain raw materials or key inputs, we may experience challenges sourcing certain of our components to meet our production requirements and may not be able to arrange for alternative sources of certain raw materials or key inputs. Any such shortage may materially adversely affect our competitive position versus companies that are able to better or more cheaply source such raw materials or key inputs.

We may incur increased costs due to fluctuations in interest rates and foreign currency exchange rates

In the ordinary course of business, we are exposed to increases in interest rates that may adversely affect funding costs associated with variable-rate debt and changes in foreign currency exchange rates. We are subject to currency exchange rate risk to the extent that our costs may be denominated in currencies other than those in which we earn and report revenues and vice versa. In addition, a decrease in the value of any of these currencies relative to the U.S. dollar could reduce our profits from non-U.S. operations and the translated value of the net assets of our non-U.S. operations when reported in U.S. dollars in our consolidated financial statements. We may seek to minimize these risks through the use of interest rate swap contracts and currency hedging agreements. There can be no assurance that any of these measures will be effective. Material changes in interest or exchange rates could result in material losses to us.

If we lose our senior management or key personnel, our business may be materially and adversely affected.

The success of our business is largely dependent on our senior management team, as well as on our ability to attract and retain other qualified key personnel. It cannot be assured that we will be able to retain all of our current senior management personnel and attract and retain other key personnel necessary for the development of our business. The loss of the services of senior management and other key personnel or the failure to attract additional personnel as required could have a material adverse effect on our business, results of operations and financial condition.

Following the consummation of the acquisition of GE Transportation, we will have substantial operations located in India, and will be subject to regulatory, economic, social and political uncertainties in India.

Although we currently have operations in India, following the consummation of our acquisition of GE Transportation, these operations will be substantially more significant, including a large-scale project involving the construction of a factory in the state of Bihar, which includes a township to house employees. The project also includes construction of two service sheds, in the states of Uttar Pradesh and Gujarat. Operations in India are inherently risky due to a number of regulatory, economic, social and political uncertainties. For example, in September 2017, several media outlets reported that the Indian government expressed a desire to switch the country's rail system from diesel to electric locomotives, which would threaten to interfere with the completion of the project and curtail the viability of our ongoing operations in India. While no such actions have been taken to date, any change in policy with respect to India's rail system could have a material adverse effect on the business of the combined company.

In addition, the Indian government has exercised and continues to exercise significant influence over many aspects of the Indian economy. Since 1991, successive Indian governments have generally pursued policies of economic liberalization and financial sector reforms, including by significantly relaxing restrictions on the private sector. Nevertheless, the role of the Indian central and state governments in the Indian economy as producers, consumers and regulators has remained significant and we cannot assure you that such liberalization policies will continue. The rate of economic liberalization could change, and specific laws and policies affecting foreign investments in India could change as well, including exposure to possible expropriation, nationalization or other governmental actions.

Further, protests against privatizations and government corruption scandals, which have occurred in the past, could slow the pace of liberalization and deregulation. A significant change in India's policy of economic liberalization and deregulation or

16

any social or political uncertainties could significantly harm business and economic conditions in India generally and our business and prospects.

India's physical infrastructure is less developed than that of many developed nations. Any congestion or disruption with respect to communication systems or any public facility, including transportation infrastructure, could disrupt our normal business activity. Any deterioration of India's physical infrastructure would harm the national economy, disrupt the transportation of people, goods and supplies, and add costs to doing business in India. These disruptions could interrupt our business operations and significantly harm our results of operations, financial condition and cash flows. Our indebtedness could adversely affect our financial health.

At December 31, 2018, we had total debt of \$3,856.9 million. We entered into a Credit Agreement, as amended, dated June 8, 2018, by and among us, Wabtec Netherlands B.V, the other borrowing subsidiaries party thereto from time to time, PNC Bank, National Association, as administrative agent, and the other parties thereto, which includes (i) a \$1.2 billion Revolving Credit Facility, (ii) a \$350.0 million Refinancing Term Loan and (iii) a \$400.0 million Delayed Draw Term Loan. Being indebted could have important consequences to us. For example, our indebtedness could:

- increase our vulnerability to general adverse economic and industry conditions;
- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund working capital, capital expenditures, acquisitions and other general corporate purposes;
- limit our flexibility in planning for, or reacting to, changes in our business and the industries in which we operate;
- place us at a disadvantage compared to competitors that have less debt; and
- limit our ability to borrow additional funds.

The indenture for our \$500.0 million floating rate senior notes due in 2021, our \$744.4 million 4.375% senior notes due in 2023, our \$499.1 million 4.150% senior notes due in 2024, our \$750.0 million 3.450% senior notes due in 2026, our \$1.25 billion 4.700% senior notes due in 2028 and our Credit Agreement contain various covenants that limit our management's discretion in the operation of our businesses.

Our Credit Agreement contains customary representations and warranties by us and our subsidiaries, including customary use of materiality, material adverse effect, and knowledge qualifiers. We and our subsidiaries are also subject to (i) customary affirmative covenants that impose certain reporting obligations on us and our subsidiaries and (ii) customary negative covenants, including limitations on: indebtedness; liens; restricted payments; fundamental changes; business activities; transactions with affiliates; restrictive agreements; changes in fiscal year; and use of proceeds. In addition, we are required to maintain (i) a ratio of EBITDA to interest expense of at least 3.00 to 1.00 over each period of four consecutive fiscal quarters ending on the last day of a fiscal quarter and (ii) a Leverage Ratio, calculated as of the last day of a fiscal quarter for a period of four consecutive fiscal quarters, of 3.25 to 1.00 or less; provided that, any material acquisition in which the cash consideration paid exceeds \$500.0 million, the maximum Leverage Ratio permitted will be (x) 3.75 to 1.00 at the end of the fiscal quarter in which such acquisition is consummated and each of the three fiscal quarters immediately following such fiscal quarter and (y) 3.50 to 1.00 at the end of each of the fourth and fifth full fiscal quarters after the consummation of such acquisition.

The indenture under which our senior notes were issued contain covenants and restrictions which limit among other things, the following: sale and leaseback transactions, sale of assets, change in control, mergers and consolidations and the incurrence of liens.

The integration of our recently completed acquisitions may not result in anticipated improvements in market position or the realization of anticipated operating synergies or may take longer to realize than expected.

Although we believe that our recent acquisitions will improve our market position and realize positive operating results, including operating synergies, operating expense reductions and overhead cost savings, we cannot be assured that these improvements will be obtained or the timing of such improvements. The management and acquisition of businesses involves substantial risks, any of which may result in a material adverse effect on our business and results of operations, including:

- the uncertainty that an acquired business will achieve anticipated operating results;
- significant expenses to integrate;
- diversion of management's attention;
- departure of key personnel from the acquired business;

- effectively managing entrepreneurial spirit and decision-making;
- integration of different information systems;
- unanticipated costs and exposure to unforeseen liabilities; and
- impairment of assets.

17

Item 1B. UNRESOLVED STAFF COMMENTS

None.

18

Item 2. PROPERTIES

Facilities

The following table provides certain summary information about the principal facilities owned or leased by the Company as of December 31, 2018. The Company believes that its facilities and equipment are generally in good condition and that, together with scheduled capital improvements, they are adequate for its present and immediately projected needs. Leases on the facilities are long-term and generally include options to renew. The Company's corporate headquarters are located at the Wilmerding, PA site.

Location	Primary Use	Segment	Own/Lease	Approximate Square Feet
Domestic				
Rothbury, MI	Manufacturing/Warehouse/Office	Freight	Own	500,000
Wilmerding, PA	Manufacturing/Service	Freight	Own	365,000 (1)
Lexington, TN	Manufacturing	Freight	Own	170,000
Jackson, TN	Manufacturing	Freight	Own	150,000
Berwick, PA	Manufacturing/Warehouse	Freight	Own	150,000
Chicago, IL	Manufacturing/Service	Freight	Own	123,000
Greensburg, PA	Manufacturing	Freight	Own	113,000
Warren, OH	Manufacturing	Freight	Own	103,000
Boise, ID	Manufacturing	Freight/Transit	Own	326,000
Maxton, NC	Manufacturing	Freight/Transit	Own	105,000
Salem, VA	Manufacturing	Transit	Own	320,000
Greenville, SC	Manufacturing	Transit	Own	154,000
Brenham, TX	Manufacturing/Office	Transit	Own	145,000
Spartanburg, SC	Manufacturing/Service	Transit	Lease	184,000
Buffalo Grove, IL	Manufacturing	Transit	Lease	116,000
International				
Sao Paulo, Brazil	Manufacturing/Office	Freight	Own	177,000
Wallaceburg (Ontario), Canada	Manufacturing	Freight	Own	126,000
Northampton, UK	Manufacturing	Freight	Lease	300,000
Shenyang City, Liaoning Province, China	Manufacturing	Freight	Lease	291,000
Lincolnshire, UK	Manufacturing/Office	Freight	Lease	149,000
London (Ontario), Canada	Manufacturing	Freight	Lease	104,000
Doncaster, UK	Manufacturing/Service	Freight/Transit	Own	330,000
Kilmarnock, UK	Manufacturing	Freight/Transit	Own	108,000
Loughborough, UK	Manufacturing	Freight/Transit	Lease	245,000
Kempton Park, South Africa	Manufacturing	Freight/Transit	Lease	156,000
Piovasco, Italy	Manufacturing	Transit	Own	301,000
Monte Alto, Brazil	Manufacturing/Office	Transit	Own	244,000
Tamil Nadu, India	Manufacturing	Transit	Own	220,000
Schkeuditz, Germany	Manufacturing	Transit	Own	219,000
Schuttorf, Germany	Manufacturing/Office	Transit	Own	189,000
Amiens, France	Manufacturing	Transit	Own	142,000
Chard, UK	Manufacturing/Office	Transit	Own	142,000
St Pierre Des Corps, France	Manufacturing	Transit	Own	133,000
Avellino, Italy	Manufacturing/Office	Transit	Own	132,000

Location	Primary Use	Segment	Own/Lease	Approximate Square Feet
Burton on Trent, UK	Manufacturing/Office	Transit	Lease	253,000
Blovice, Czech Republic	Manufacturing	Transit	Lease	235,000
Nyrany, Czech Republic	Manufacturing/Office	Transit	Lease	223,000
Witten, Germany	Manufacturing	Transit	Lease	209,000
Verviers, Belgium	Manufacturing/Office	Transit	Lease	137,000
Camisano, Italy	Manufacturing/Office	Transit	Lease	136,000
San Luis Potosi, Mexico	Manufacturing/Office	Transit	Lease	113,000
Birkenhead, UK	Overhaul/Manufacturing	Transit	Lease	109,000
Shanghai, China	Manufacturing	Transit	Lease	104,000

(1) Approximately 250,000 square feet are currently used in connection with the Company's corporate and manufacturing operations. The remainder is leased to a third party.

Item 3. LEGAL PROCEEDINGS

Additional information with respect to legal proceedings is included in Note 21 of "Notes to Consolidated Financial Statements" included in Part IV, Item 15 of this report and incorporate by reference herein.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

EXECUTIVE OFFICERS OF THE REGISTRANT

The following table provides information on our executive officers as of February 25, 2019. They are elected periodically by our Board of Directors and serve at its discretion.

Officers	Age	Position
Albert J. Neupaver	68	Executive Chairman of the Board
Raymond T. Betler	63	President and Chief Executive Officer
Rafael Santana	47	Executive Vice President, President and Chief Executive Officer, Freight Segment
David L. DeNinno	63	Executive Vice President, General Counsel and Secretary
Patrick D. Dugan	52	Executive Vice President Finance, and Chief Financial Officer
Scott E. Wahlstrom	55	Executive Vice President, Human Resources
Dominique Malefant	57	Senior Vice President and Global Technology Officer
John A. Mastalerz	52	Senior Vice President of Finance, Corporate Controller and Principal Accounting Officer
Greg Sbrocco	50	Senior Vice President, Wabtec Excellence Program
Timothy R. Wesley	57	Vice President, Investor Relations and Corporate Communications

Albert J. Neupaver was re-named Executive Chairman of the Board of Directors in May 2018, having previously served as Executive Chairman from May 2014 to May 2017. Prior to that, Mr. Neupaver served as Executive Chairman of the Company since May 2014. Previously, he served as Chairman from May 2017 to May 2018, and Chairman and CEO from May 2013 to May 2014 and as the Company's President and CEO from February 2006 to May 2013. Prior to joining Wabtec, Mr. Neupaver served in various positions at AMETEK, Inc., a leading global manufacturer of electronic instruments and electric motors. Most recently he served as President of its Electromechanical Group for nine years.

Raymond T. Betler was named President and Chief Executive Officer in May 2014. Previously, Mr. Betler was President and Chief Operating Officer since May 2013 and the Company's Chief Operating Officer since December 2010. Prior to that, he served as Vice President, Group Executive of the Company since August 2008. Prior to joining Wabtec, Mr. Betler served in various positions of increasing responsibility at Bombardier Transportation since 1979. Most recently, Mr. Betler served as President, Total Transit Systems from 2004 until 2008 and before that as President, London Underground Projects from 2002 to 2004.

Rafael Santana was named Executive Vice President, President and Chief Executive Officer of Wabtec's Freight Segment effective February 25, 2019. Previously Mr. Santana was President and Chief Executive Officer of GE Transportation since November 2017. Mr. Santana has held several global leadership positions since joining GE in 2000, including roles in the Transportation, Power and Oil and Gas businesses. Prior to being named President and Chief Executive Officer of GE Transportation, Mr. Santana was President and Chief Executive Officer of GE in Latin America. He also served as President and Chief Executive Officer of GE Oil and Gas Turbomachinery Solutions and had roles as Chief Executive Officer for GE Gas Engines and Chief Executive Officer for GE Energy in Latin America.

David L. DeNinno was named Executive Vice President, General Counsel and Secretary of the Company effective December 2016. Previously, Mr. DeNinno served as Sr. Vice President, General Counsel and Secretary since February 2012. Previously, Mr. DeNinno served as a partner at K&L Gates LLP since May 2011 and prior to that with Reed Smith LLP.

Patrick D. Dugan was named Executive Vice President and Chief Financial Officer effective December 2016. Previously Mr. Dugan served as Senior Vice President and Chief Financial Officer since January 2014. Previously, Mr. Dugan was Senior Vice President, Finance and Corporate Controller from January 2012 until November 2013. He originally joined Wabtec in 2003 as Vice President, Corporate Controller. Prior to joining Wabtec, Mr. Dugan served as Vice President and Chief Financial Officer of CWI International, Inc. from December 1996 to November 2003. Prior to 1996, Mr. Dugan was a Manager with PricewaterhouseCoopers.

Scott E. Wahlstrom was named Executive Vice President, Human Resources effective December 2016. Previously, Mr. Wahlstrom served as Senior Vice President, Human Resources since January 2012. Prior to that, Mr. Wahlstrom has been Vice President, Human Resources, since November 1999. Previously, Mr. Wahlstrom was Vice President, Human Resources & Administration of MotivePower Industries, Inc. from August 1996 until November 1999.

Dominique Malefant was named Senior Vice President, Global Technology effective February 25, 2019. Previously, Mr. Malefant was the Vice President of Global Technology of GE Transportation. Prior to that, Mr. Malefant served as Vice President of product and engineering for the Transport and Propulsion and Control business at Bombardier Transport.

21

John A. Mastalerz was named Senior Vice President of Finance, Corporate Controller and Principal Accounting Officer in July 2017. Previously, Mr. Mastalerz served as Vice President and Corporate Controller from January 2014 to July 2017. Prior to joining Wabtec, Mr. Mastalerz served in various executive management roles with the H.J. Heinz Company from January 2001 to December 2013, most recently as Corporate Controller and Principal Accounting Officer. Prior to 2001, Mr. Mastalerz was a Senior Manager with PricewaterhouseCoopers.

Greg Sbrocco was named Senior Vice President, Wabtec Excellence Program, effective February 25, 2019. Prior to this, Mr. Sbrocco was Global Supply Chain Leader for GE Transportation. Mr. Sbrocco has been with GE for 27 years as he joined in 1992 as an Environmental Engineer for the GE Energy business. During his tenure with GE, Mr. Sbrocco has held several leadership roles in GE Energy, GE Oil and Gas, and GE Transportation.

Timothy R. Wesley was named Vice President, Investor Relations and Corporate Communications in November 1999. Previously, Mr. Wesley was Vice President, Investor and Public Relations of MotivePower Industries, Inc. from August 1996 until November 1999.

PART II

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

The Common Stock of the Company is listed on the New York Stock Exchange under the symbol "WAB". As of February 20, 2019, there were 96,613,310 shares of Common Stock outstanding held by 452 holders of record. The following performance graph and related information shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference to any future filings under the Securities Act of 1933 and the Securities Exchange Act of 1934, each as amended, except to the extent that Wabtec specifically incorporates it by reference into such filing. The graph below compares the total stockholder return through December 31, 2018, of Wabtec's common stock to (i) the S&P 500 and (ii) our peer group of manufacturing companies which consists of the following publicly traded companies: AGCO, AMETEK, Colfax, Dana, Dover, Flowserve, The Greenbrier Companies, Navistar, Oshkosh, Regal Beloit, Rockwell Automation, Rockwell Collins, Terex, Trinity Industries, Snap-On, WABCO and Xylem.

Month	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs (1)	Maximum Dollar Value of Shares That May Yet Be Purchased Under the Programs (1)
October 2018	—	—	—	\$ 137,824,347
November 2018	—	\$ —	—	\$ 137,824,347
December 2018	—	\$ —	—	\$ 137,824,347
Total quarter ended December 31, 2018	—	\$ —	—	\$ 137,824,347

On February 9, 2016, the Board of Directors amended its stock repurchase authorization to \$350 million of the Company's outstanding shares. During 2018, the Company did not repurchase any shares, leaving \$137.8 million remaining under the authorization. The Company intends to purchase shares on the open market or in negotiated (1) block trades from time to time depending on market conditions. No time limit was set for the completion of the programs which conforms to the requirements under the 2016 and 2018 Refinancing Credit Agreements, as well as the senior notes currently outstanding.

Item 6. SELECTED FINANCIAL DATA

The following table shows selected consolidated financial information of the Company and has been derived from audited financial statements. This financial information should be read in conjunction with, and is qualified by reference to, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the Consolidated Financial Statements of the Company and the Notes thereto included elsewhere in this Form 10-K.

In thousands, except per share amounts	Year Ended December 31,				
	2018	2017	2016	2015	2014
Income Statement Data					
Net sales	\$4,363,547	\$3,881,756	\$2,931,188	\$3,307,998	\$3,044,454
Gross profit	1,233,885	1,065,313	924,239	1,047,816	935,982
Operating expenses	(760,448)	(644,234)	(467,632)	(438,962)	(406,198)
Income from operations	\$473,437	\$421,079	\$456,607	\$608,854	\$529,784
Interest expense, net	\$(112,235)	\$(77,884)	\$(50,298)	\$(27,254)	\$(29,074)
Other income, net	6,380	8,868	6,528	3,768	7,145
Net income attributable to Wabtec shareholders	\$294,944	\$262,261	\$304,887	\$398,628	\$351,680
Diluted Earnings per Common Share					
Net income attributable to Wabtec shareholders	\$3.05	\$2.72	\$3.34	\$4.10	\$3.62
Cash dividends declared per share	\$0.48	\$0.44	\$0.36	\$0.28	\$0.20
Fully diluted shares outstanding	96,464	96,125	91,141	97,006	96,885
Balance Sheet Data					
Total assets	\$8,649,234	\$6,579,980	\$6,581,018	\$3,229,513	\$3,303,841
Cash, cash equivalents, and restricted cash	2,342,354	233,401	398,484	226,191	425,849
Total debt	3,856,873	1,870,528	1,892,776	692,238	521,195
Total equity	2,869,075	2,828,532	2,976,825	1,701,339	1,808,298

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

OVERVIEW

Wabtec is one of the world's largest providers of value-added, technology-based products and services for the global rail industry. Our products are found on virtually all U.S. locomotives, freight cars and passenger transit vehicles, as well as in more than 100 countries throughout the world. Our products enhance safety, improve productivity and reduce maintenance costs for customers, and many of our core products and services are essential in the safe and efficient operation of freight rail and passenger transit vehicles. Wabtec is a global company with operations in 30 countries. In 2018, about 67% of the Company's revenues came from customers outside the U.S.

Management Review and Future Outlook

Wabtec's long-term financial goals are to generate cash flow from operations in excess of net income, maintain a strong credit profile while minimizing our overall cost of capital, increase margins through strict attention to cost controls and implementation of the Wabtec Excellence Program, and increase revenues through a focused growth strategy, including product innovation and new technologies, global and market expansion, aftermarket products and services, and acquisitions. In addition, Management evaluates the Company's current operational performance through measures such as quality and on-time delivery.

The Company primarily serves the worldwide freight and transit rail industries. As such, our operating results are largely dependent on the level of activity, financial condition and capital spending plans of railroads and passenger transit agencies around the world, and transportation equipment manufacturers who serve those markets. Many factors influence these industries, including general economic conditions; traffic volumes, as measured by freight carloadings and passenger ridership; government spending on public transportation; and investment in new technologies. In general, trends such as increasing urbanization, a focus on sustainability and environmental awareness, an aging equipment fleet, and growth in global trade are expected to drive continued investment in freight and transit rail. The Company monitors a variety of factors and statistics to gauge market activity. Freight rail markets around the world are driven primarily by overall economic conditions and activity, while Transit markets are driven primarily by government funding and passenger ridership. Changes in these market drivers can cause fluctuations in demand for Wabtec's products and services.

According to the 2018 bi-annual edition of a market study by UNIFE, the Association of the European Rail Industry, the accessible global market for railway products and services was more than \$100 billion and was expected to grow at a compounded annual growth rate of 2.6% through 2023. The three largest geographic markets, which represented about 80% of the total accessible market, were Europe, North America and Asia Pacific. UNIFE projected above-average growth rates in North America, Latin America and Africa/Middle East, with Asia Pacific and Europe growing at about the industry average. UNIFE said trends such as urbanization and increasing mobility, deregulation, investments in new technologies, energy and environmental issues, and increasing government support continue to drive investment. The largest product segments of the market were rolling stock, services and infrastructure, which represent almost 90% of the accessible market. UNIFE projected spending on turnkey management projects and infrastructure to grow at above-average rates. UNIFE estimated that the global installed base of locomotives was about 114,000 units, with about 33% in Asia Pacific, about 26% in North America and about 18% in Russia-CIS (Commonwealth of Independent States). Wabtec estimates that about 2,500 new locomotives were delivered worldwide in 2018, and we expect deliveries of about 2,900 in 2019. UNIFE estimated the global installed base of freight cars was about 5.1 million, with about 33% in North America, about 26% in Asia Pacific and about 24% in Russia-CIS. Wabtec estimates that about 175,000 new freight cars were delivered worldwide in 2018, and we expect deliveries of about 174,000 in 2019. UNIFE estimated the global installed base of passenger transit vehicles to be about 600,000 units, with about 45% in Asia Pacific, about 33% in Europe and about 12% in Russia-CIS. Wabtec estimates that about 30,000 new passenger transit vehicles were ordered worldwide in 2018, and we expect orders of about the same number in 2019.

In Europe, the majority of the rail system serves the passenger transit market, which is expected to continue growing as energy and environmental factors encourage continued investment in public mass transit. According to UNIFE, France, Germany and the United Kingdom were the largest Western European transit markets, representing almost two-thirds of industry spending in the European Union. UNIFE projected the accessible Western European rail market

to grow at about 2.3% annually, led by investments in new rolling stock in France and Germany. About 75% of freight traffic in Europe is hauled by truck, while rail accounts for about 20%. The largest freight markets in Europe are Germany, Poland and the United Kingdom. In recent years, the European Commission has adopted a series of measures designed to increase the efficiency of the European rail network by standardizing operating rules and certification requirements. UNIFE believes that adoption of these measures should have a positive effect on ridership and investment in public transportation over time.

In North America, railroads carry about 40% of intercity freight, as measured by ton-miles, which is more than any other mode of transportation. Through direct ownership and operating partnerships, U.S. railroads are part of an integrated network that includes railroads in Canada and Mexico, forming what is regarded as the world's most-efficient and lowest-cost freight rail service. There are more than 500 railroads operating in North America, with the largest railroads, referred to as "Class I," accounting for more than 90% of the industry's revenues. The railroads carry a wide variety of commodities and goods, including coal, metals, minerals, chemicals, grain, and petroleum. These commodities represent about 50% of total rail carloadings, with intermodal carloads accounting for the rest. Railroads operate in a competitive environment, especially with the trucking industry, and are always seeking ways to improve safety, cost and reliability. New technologies offered by Wabtec and others in the industry can provide some of these benefits. Demand for our freight related products and services in North America is driven by a number of factors, including rail traffic, and production of new locomotives and new freight cars. In the U.S., the passenger transit industry is dependent largely on funding from federal, state and local governments, and from fare box revenues. Demand for North American passenger transit products is driven by a number of factors, including government funding, deliveries of new subway cars and buses, and ridership. The U.S. federal government provides money to local transit authorities, primarily to fund the purchase of new equipment and infrastructure for their transit systems.

Growth in the Asia Pacific market has been driven mainly by the continued urbanization of China and India, and by investments in freight rail rolling stock and infrastructure in Australia to serve its mining and natural resources markets. India is making significant investments in rolling stock and infrastructure to modernize its rail system; for example, the country has awarded a 1,000-unit locomotive order to GE Transportation.

Other key geographic markets include Russia-CIS and Africa-Middle East. With about 1.2 million freight cars and about 20,000 locomotives, Russia-CIS is among the largest freight rail markets in the world, and it's expected to invest in both freight and transit rolling stock. PRASA, the Passenger Rail Agency of South Africa, is expected to continue to invest in new transit cars and new locomotives. According to UNIFE, emerging markets were expected to grow at above-average rates as global trade led to increased freight volumes and urbanization led to increased demand for efficient mass-transportation systems. As this growth occurs, Wabtec expects to have additional opportunities to provide products and services in these markets.

In its study, UNIFE also said it expected increased investment in digital tools for data and asset management, and in rail control technologies, both of which would improve efficiency in the global rail industry. UNIFE said data-driven asset management tools have the potential to reduce equipment maintenance costs and improve asset utilization, while rail control technologies have been focused on increasing track capacity, improving operational efficiency and ensuring safer railway traffic. Wabtec offers products and services to help customers make ongoing investments in these initiatives.

In 2019 and beyond, general global economic and market conditions will have an impact on our sales and operations. To the extent that these factors cause instability of capital markets, shortages of raw materials or component parts, longer sales cycles, deferral or delay of customer orders or an inability to market our products effectively, our business and results of operations could be materially adversely affected. In addition, we face risks associated with our four-point growth strategy including the level of investment that customers are willing to make in new technologies developed by the industry and the Company, and risks inherent in global expansion. When necessary, we will modify our financial and operating strategies to reflect changes in market conditions and risks.

MERGER OF WABTEC WITH GE TRANSPORTATION

Wabtec, GE, SpinCo, which was a newly formed wholly owned subsidiary of GE, and Merger Sub, which was a newly formed wholly owned subsidiary of the Company, entered into the Original Merger Agreement on May 20, 2018, and GE, SpinCo, Wabtec and Wabtec US Rail Holdings, Inc. ("Direct Sale Purchaser") entered into the Original Separation Agreement on May 20, 2018, which together provided for the combination of Wabtec and GE Transportation. The Original Merger Agreement and Original Separation Agreement were subsequently amended on January 25, 2019 and the merger was completed on February 25, 2019.

In connection with the Direct Sale, certain assets of GE Transportation, including the equity interests of certain pre-Transaction subsidiaries of GE that compose part of GE Transportation, were sold to Direct Sale Purchaser for a

cash payment of \$2.875 billion, and Direct Sale Purchaser assumed certain liabilities of GE Transportation in connection with this purchase. Thereafter, GE transferred the SpinCo Business to SpinCo and its subsidiaries (to the extent not already held by SpinCo and its subsidiaries), and SpinCo issued to GE shares of SpinCo Class A preferred stock, SpinCo Class B preferred stock, SpinCo Class C preferred stock and additional shares of SpinCo common stock in the SpinCo Transfer. Following this issuance of additional SpinCo common stock to GE, and immediately prior to the Distribution, GE owned 8,700,000,000 shares of SpinCo common stock, 15,000 shares of SpinCo Class A preferred stock, 10,000 shares of SpinCo Class B preferred stock and one share of SpinCo Class C preferred stock, which constituted all of the outstanding stock of SpinCo.

Following the Direct Sale, GE distributed the Distribution Shares of SpinCo in a spin-off transaction. Immediately after the Distribution, Merger Sub merged with and into SpinCo, whereby the separate corporate existence of Merger Sub ceased and SpinCo continued as the surviving company and a wholly owned subsidiary of Wabtec (except with respect to shares of SpinCo Class A preferred stock held by GE). In the Merger, subject to adjustment in accordance with the Merger Agreement, each share of SpinCo common stock converted into the right to receive a number of shares of Wabtec common stock based on the common stock exchange ratio set forth in the Merger Agreement and the share of SpinCo Class C preferred stock was converted into the right to receive (a) 10,000 shares of Wabtec convertible preferred stock and (b) a number of shares of Wabtec common stock equal to 9.9% of the fully-diluted pro forma Wabtec shares. Immediately prior to the Merger, Wabtec paid \$10.0 million in cash to GE in exchange for all of the shares of SpinCo Class B preferred stock.

Upon consummation of the Merger and calculated based on Wabtec's outstanding common stock on a fully-diluted, as-converted and as-exercised basis, as of December 31, 2018, approximately 49.2% of the outstanding shares of Wabtec common stock would be held collectively by GE and Spin-Off record date holders of GE common stock (with 9.9% to be held by GE directly in shares of Wabtec common stock and 15% underlying the shares of Wabtec convertible preferred stock to be held by GE) and approximately 50.8% of the outstanding shares of Wabtec common stock would be held by pre-Merger Wabtec stockholders. Following the effective time of the Merger, GE will also own 15,000 shares of SpinCo Class A preferred stock, and Wabtec will hold 10,000 shares of SpinCo Class B preferred stock. The shares of Wabtec common stock and Wabtec convertible preferred stock held by GE will be subject to GE's obligations under the Shareholders Agreement, including, among other things, and in each case subject to certain exceptions, (i) restrictions on the ability to sell, transfer or otherwise divest such shares for a period of 30 days and (ii) an obligation to sell, transfer or otherwise divest (A) by no later than 120 days following the closing date of the Merger, GE's (and its affiliates') ownership of Wabtec common stock and/or Wabtec convertible preferred stock so that GE (together with its affiliates) beneficially owns not less than 14.9% and not more than 19.9% of the number of shares of Wabtec common stock that were outstanding immediately after the closing of the Merger, (B) by no later than one year following the closing date of the Merger, GE's (and its affiliates') ownership of Wabtec common stock and/or Wabtec convertible preferred stock so that GE (together with its affiliates) beneficially owns not more than 18.5% of the number of shares of Wabtec common stock that were outstanding immediately after the closing of the Merger, in each case of clauses (A) and (B) treating the Wabtec convertible preferred stock as the Wabtec common stock into which it is convertible both for purposes of determining the number of shares of Wabtec common stock owned and for purposes of determining the number of shares of Wabtec common stock outstanding and (C) by no later than the third anniversary of the closing date of the Merger, all of the subject shares that GE (together with its affiliates) beneficially owns, and (iii) an obligation to vote all of such shares of Wabtec common stock in the proportion required under the Shareholders Agreement.

The estimated total value of the consideration to be paid by Wabtec in the Transactions was subject to the market price of shares of Wabtec common stock at the date of closing. Using Wabtec's closing stock price on the NYSE as of February 22, 2019, the total value of the consideration for the Transactions was approximately \$10.2 billion, including the Direct Sale Purchase Price, contingent consideration, assumed debt and net of cash acquired.

On September 14, 2018, Wabtec completed a public offering and sale of (i) \$500 million aggregate principal amount of floating rate senior notes, (ii) \$750 million aggregate principal amount of 2024 Senior Notes and (iii) \$1.25 billion aggregate principal amount of 2028 Senior Notes. The Company used the net proceeds from the offering and sale of these notes combined with the proceeds from a \$400 million delayed draw term loan that was entered into on June 8, 2018 to finance the \$2.875 billion Direct Sale. Wabtec used a portion of the proceeds from the September 14, 2018 notes to pay debt associated with its revolving credit facility. The remaining proceeds are classified as Restricted Cash on the consolidated balance sheet, as the Company used these cash amounts to finance the Direct Sale. Refer to Footnote 10 for further information regarding debt.

After the Merger, SpinCo, which is Wabtec's wholly owned subsidiary (except with respect to shares of SpinCo Class A preferred stock held by GE), holds the SpinCo Business and Direct Sale Purchaser, which also is Wabtec's wholly owned subsidiary, holds the assets purchased and the liabilities assumed in connection with the Direct Sale. Together, SpinCo and Direct Sale Purchaser own and operate the post-Transaction GE Transportation. All shares of the Company's common stock, including those issued in the Merger, are listed on the NYSE under the Company's current

trading symbol “WAB.”

On the date of the Distribution, GE or its subsidiaries and SpinCo or the SpinCo Transferred Subsidiaries entered into additional agreements relating to, among other things, intellectual property, employee matters, tax matters, research and development and transition services.

ACQUISITION OF FAIVELEY TRANSPORT S.A.

On November 30, 2016, the Company acquired majority ownership of Faiveley Transport under the terms of the Share Purchase Agreement. Faiveley Transport is a leading global provider of value-added, integrated systems and services for the railway industry with annual sales of about \$1.2 billion and more than 5,700 employees in 24 countries.

Faiveley Transport supplies railway manufacturers, operators and maintenance providers with a range of value-added, technology-based systems and services in Energy & Comfort (air conditioning, power collectors and converters, and passenger information), Access & Mobility (passenger access systems and platform doors), and Brakes and Safety (braking systems and couplers). The transaction was structured as a step acquisition as follows:

On November 30, 2016, the Company acquired majority ownership of Faiveley Transport, after completing the purchase of the Faiveley family's ownership interest under the terms of the Share Purchase Agreement, which directed the Company to pay €100 per share of Faiveley Transport, payable between 25% and 45% in cash at the election of those shareholders and the remainder payable in Wabtec stock. The Faiveley family's ownership interest acquired by the Company represented approximately 51% of outstanding share capital and approximately 49% of the outstanding voting shares of Faiveley Transport. Upon completion of the share purchase under the Share Purchase Agreement, Wabtec commenced a tender offer for the remaining publicly traded Faiveley Transport shares. The public shareholders had the option to elect to receive €100 per share in cash or 1.1538 shares of Wabtec common stock per share of Faiveley Transport. The common stock portion of the consideration was subject to a cap on issuance of Wabtec common shares that was equivalent to the rates of cash and stock elected by the 51% owners.

On February 3, 2017, the initial cash tender offer was closed, which resulted in the Company acquiring approximately 27% of additional outstanding share capital and voting rights of Faiveley Transport for approximately \$411.8 million in cash and \$25.2 million in Wabtec stock. After the initial cash tender offer, the Company owned approximately 78% of outstanding share capital and 76% of voting rights.

On March 6, 2017, the final cash tender offer was closed, which resulted in the Company acquiring approximately 21% of additional outstanding share capital and 22% of additional outstanding voting rights of Faiveley Transport for approximately \$303.2 million in cash and \$0.3 million in Wabtec stock. After the final cash tender offer, the Company owned approximately 99% of the share capital and 98% of the voting rights of Faiveley Transport.

On March 21, 2017, a mandatory squeeze-out procedure was finalized, which resulted in the Company acquiring the Faiveley Transport shares not tendered in the offers for approximately \$17.5 million in cash. This resulted in the Company owning 100% of the share capital and voting rights of Faiveley Transport.

As of November 30, 2016, the date the Company acquired 51% of the share capital and 49% of the voting interest in Faiveley Transport, Faiveley Transport was consolidated under the variable interest entity model as the Company concluded that it was the primary beneficiary of Faiveley Transport as it then possessed the power to direct the activities of Faiveley Transport that most significantly impact its economic performance and it then possessed the obligation and right to absorb losses and benefits from Faiveley Transport.

The purchase price paid for 100% ownership of Faiveley Transport was \$1,507 million. The \$744.7 million included as deposits in escrow on the consolidated balance sheet at December 31, 2016 was cash designated for use as consideration for the tender offers.

RESULTS OF OPERATIONS

The following table shows our Consolidated Statements of Operations for the years indicated.

In thousands	For the year ended December 31,		
	2018	2017	2016
Net sales	\$4,363,547	\$3,881,756	\$2,931,188
Cost of sales	(3,129,662)	(2,816,443)	(2,006,949)
Gross profit	1,233,885	1,065,313	924,239
Selling, general and administrative expenses	(633,244)	(512,552)	(373,559)
Engineering expenses	(87,450)	(95,166)	(71,375)
Amortization expense	(39,754)	(36,516)	(22,698)
Total operating expenses	(760,448)	(644,234)	(467,632)
Income from operations	473,437	421,079	456,607
Interest expense, net	(112,235)	(77,884)	(50,298)
Other income, net	6,380	8,868	6,528
Income from operations before income taxes	367,582	352,063	412,837
Income tax expense	(75,879)	(89,773)	(99,433)
Net income	291,703	262,290	313,404
Net loss (income) attributable to noncontrolling interest	3,241	(29)	(8,517)
Net income attributable to Wabtec shareholders	\$294,944	\$262,261	\$304,887

2018 COMPARED TO 2017

The following table summarizes the results of operations for the period:

In thousands	For the year ended December 31,		
	2018	2017	Percent Change
Freight Segment	\$1,564,297	\$1,396,588	12.0 %
Transit Segment	2,799,250	2,485,168	12.6 %
Net sales	4,363,547	3,881,756	12.4 %
Income from operations	473,437	421,079	12.4 %
Net income attributable to Wabtec shareholders	\$300,344	\$262,261	14.5 %

The following table shows the major components of the change in sales in 2018 from 2017:

In thousands	Freight Segment	Transit Segment	Total
2017 Net Sales	\$1,396,588	\$2,485,168	\$3,881,756
Acquisitions	50,876	83,829	134,705
Change in Sales by Product Line:			
Specialty Products & Electronics	85,098	73,797	158,895
Brake Products	21,561	104,642	126,203
Remanufacturing, Overhaul & Build	(21,862)	15,356	(6,506)
Transit Products	—	(30,037)	(30,037)
Other	33,174	3,044	36,218
Foreign exchange	(1,138)	63,451	62,313
2018 Net Sales	\$1,564,297	\$2,799,250	\$4,363,547

Net sales increased by \$481.8 million to \$4,363.5 million in 2018 from \$3,881.8 million in 2017. The increase is primarily due to an organic increase of \$158.9 million for Specialty Products and Electronics from higher demand for freight and transit original equipment rail products and train control and signaling products and services and a \$126.2 million increase for Brake Products due to increased demand for original equipment brakes from freight and transit

customers. Additionally, sales from acquisitions increased sales by \$134.7 million, and favorable foreign exchange increased sales \$62.3 million.

Freight Segment sales increased by \$167.7 million, or 12.0%, mostly from an organic increase of \$85.1 million for Specialty Products and Electronics due to higher demand for freight original equipment rail products and train control and signaling products and services. Additionally, Other Products sales increased \$33.2 million from increased spare parts demand resulting from an increase in rail traffic. Acquisitions increased sales by \$50.9 million.

Transit Segment sales increased by \$314.1 million, or 12.6%, primarily due to a \$104.6 million increase for Brake Products from higher demand for original equipment brakes, \$83.8 million from sales related to acquisitions, and \$73.8 million for Specialty Products and Electronics from higher demand for train control and signaling products and services. Favorable foreign exchange increased sales by \$63.5 million.

Cost of Sales and Gross Profit The following table shows the major components of cost of sales for the periods indicated:

In thousands	For the year ended December 31, 2018					
	Freight	Percentage of Sales	Transit	Percentage of Sales	Total	Percentage of Sales
Material	\$544,580	34.8 %	\$1,154,663	41.2 %	\$1,699,243	38.9 %
Labor	227,006	14.5 %	484,581	17.3 %	711,587	16.3 %
Overhead	271,351	17.3 %	382,539	13.7 %	653,890	15.0 %
Other/Warranty	9,980	0.6 %	54,962	2.0 %	64,942	1.5 %
Total cost of sales	\$1,052,917	67.2 %	\$2,076,745	74.2 %	\$3,129,662	71.7 %

In thousands	For the year ended December 31, 2017					
	Freight	Percentage of Sales	Transit	Percentage of Sales	Total	Percentage of Sales
Material	\$526,727	37.7 %	\$1,123,571	45.2 %	\$1,650,298	42.5 %
Labor	186,863	13.4 %	339,110	13.6 %	525,973	13.5 %
Overhead	233,786	16.7 %	341,389	13.7 %	575,175	14.8 %
Other/Warranty	7,148	0.5 %	57,849	2.3 %	64,997	1.7 %
Total cost of sales	\$954,524	68.3 %	\$1,861,919	74.8 %	\$2,816,443	72.5 %

Cost of sales increased by \$313.2 million to \$3,129.7 million in 2018 compared to \$2,816.4 million in 2017. In 2018, cost of sales as a percentage of sales was 71.7% compared to 72.5% in 2017. Cost of sales in 2018 includes \$17.6 million of restructuring costs primarily in the Transit Segment. Cost of sales in 2017 includes \$44.5 million of project adjustments on certain projects and \$11.8 million of restructuring and integration costs related to recent acquisitions, all of which were primarily in the Transit Segment. Excluding the restructuring costs and contract adjustments in both years, cost of sales increased 0.2% as a percentage of sales.

Freight Segment cost of sales decreased 1.1% as a percentage of sales to 67.2% in 2018 compared to 68.3% in 2017. The decrease is primarily related to a favorable product mix which saw an increase in sales for train control and signaling products and services and freight car products due to an increase in freight cars built which have a higher margin. The train control and signaling products and services have lower material content and higher labor content which contributed to the decrease in material costs as a percentage of revenue and a subsequent increase in the labor percentage. Additionally, there were \$11.4 million of project adjustments and restructuring costs in 2017, which did not recur in 2018.

Transit Segment cost of sales decreased 0.6% as a percentage of sales to 74.2% in 2018 compared to 74.8% in 2017. Cost of sales in 2018 includes \$15.9 million of restructuring costs primarily related to the downsizing of operations in the U.K. and consolidation of certain operations in the U.S. and China. Cost of sales in 2017 includes \$37.6 million of project adjustments on certain contracts primarily related to material and warranty cost and \$7.3 million of restructuring and integration costs related to recent acquisitions. Excluding the restructuring costs and contract adjustments in both years, Transit Segment cost of sales increased 0.5% as a percentage of sales. This increase is a result of additional costs on projects primarily in the U.K.

Included in cost of sales is warranty expense. The provision for warranty expense is generally established for specific losses, along with historical estimates of customer claims as a percentage of sales, which can cause variability in warranty expense between quarters. Warranty expense was \$58.0 million in 2018 compared to \$50.4 million in 2017. The increase in warranty expense is primarily related to the increase in sales.

Operating expenses The following table shows our operating expenses:

In thousands	For the year ended December 31,					
	2018	Percentage of Sales		2017	Percentage of Sales	
Selling, general and administrative expenses	\$633,244	14.5	%	\$512,552	13.2	%
Engineering expenses	87,450	2.0	%	95,166	2.5	%
Amortization expense	39,754	0.9	%	36,516	0.9	%
Total operating expenses	\$760,448	17.4	%	\$644,234	16.6	%

Total operating expenses as a percentage of sales increased 0.8% to 17.4% in 2018 compared to 16.6% in 2017. Selling, general, and administrative expenses increased \$120.7 million, or 23.5%, primarily due to \$21.3 million of costs related to the GE Transportation transaction, \$20.3 million of restructuring costs related to the exit of certain operations and headcount reductions across the company, \$7.2 million of costs related to a goods and service tax law change in India, \$14.8 million of increased employee benefit costs and \$18.0 million in incremental expense from acquisitions. Changes in foreign currency rates increased selling, general, and administrative expenses by \$14.1 million and organic sales volume increases contributed to the remainder of the change. In 2017, selling, general, and administrative expenses included \$29.7 million of Faiveley Transport transaction and restructuring costs. Engineering expense decreased by \$7.7 million, or 13.8%, primarily due to timing of research and development expenses. Amortization expense increased \$3.1 million due to amortization of intangibles associated with acquisitions.

The following table shows our segment operating expenses:

In thousands	For the year ended December 31,			Percent Change
	2018	2017		
Freight Segment	\$206,549	\$177,787	16.2	%
Transit Segment	494,565	435,031	13.7	%
Corporate	59,334	31,416	88.9	%
Total operating expenses	\$760,448	\$644,234	18.0	%

Freight Segment operating expenses increased \$28.8 million, or 16.2%, in 2018 and increased 50 basis points to 13.2% of sales. The increase is primarily attributable to increased sales and marketing expenses of \$4.0 million attributable to the increased sales volumes, increased employee benefit costs of \$5.4 million, and \$11.1 million of incremental operating expenses from prior year acquisitions.

Transit Segment operating expenses increased \$59.5 million, or 13.7%, in 2018 and increased 20 basis points to 17.7% of sales. Operating expense included \$18.3 million and \$20.0 million of restructuring and integration charges in 2018 and 2017, respectively. The 2018 restructuring charges related to the exit of certain operations and headcount reductions and the 2017 restructuring charges related to Faiveley Transportation integration costs. Additionally, in 2018, operating expenses includes \$7.2 million of costs related to a goods and service tax law change in India.

Excluding the restructuring and integration costs in both years and the impact of the goods and service tax law change in 2018, Transit operating expenses increased \$54.1 million. This increase is primarily due to increased sales volumes, increase employee benefits costs of \$9.5 million, and \$11.0 million of incremental operating expenses from acquisitions. In addition, changes in foreign currency rates increased operating expenses by \$15.8 million.

Corporate non-allocated operating expenses increased \$27.9 million in 2018 due primarily to costs related to the GE Transportation transaction of \$21.3 million and increased litigation costs of \$6.7 million. The prior year operating costs included \$5.7 million related to the Faiveley integration.

Interest expense, net Overall interest expense, net, increased \$34.4 million in 2018 because of interest expense associated with the proposed GE Transportation transaction of \$29.3 million. In addition, net interest expense in the prior year included a \$2.2 million benefit related to the prepayment of debt assumed in the Faiveley Transport acquisition.

Other expense, net Other expense, net, decreased \$2.5 million to \$6.4 million for 2018, compared to 2017.

Income taxes The effective income tax rate was 20.6% and 25.5% in 2018 and 2017, respectively. On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Act. The U.S. tax reform bill lowered the Federal statutory tax rate from 35% to 21% beginning January 1, 2018. The decrease in the effective tax for the

twelve months ended December 31, 2018 is the result of a higher earnings mix in lower tax jurisdictions as well as a benefit from the completion of the accounting for the income tax effects of the Tax Act and the adjustment to the provisional amounts previously recorded in accordance with SEC Staff Accounting Bulletin No. 118 which was partially offset by the reversal of non-recurring tax benefits recorded in the twelve months ended December 31, 2018.

2017 COMPARED TO 2016
The following table summarizes the results of operations for the period:

In thousands	For the year ended December 31,		
	2017	2016	Percent Change
Freight Segment	\$1,396,588	\$1,543,098	(9.5)%
Transit Segment	2,485,168	1,388,090	79.0 %
Net sales	3,881,756	2,931,188	32.4 %
Income from operations	421,079	456,607	(7.8)%
Net income attributable to Wabtec shareholders	\$262,261	304,887	(14.0)%

The following table shows the major components of the change in sales in 2017 from 2016:

In thousands	Freight	Transit	Total
	Segment	Segment	
2016 Net Sales	\$1,543,098	\$1,388,090	\$2,931,188
Acquisition	148,122	1,035,061	1,183,183
Change in Sales by Product Line:			
Specialty Products & Electronics	(164,532)	8,502	(156,030)
Remanufacturing, Overhaul & Build	(79,129)	10,548	(68,581)
Brake Products	(51,595)	2,473	(49,122)
Transit Products	—	45,462	45,462
Other	(480)	1,397	917
Foreign exchange	1,104	(6,365)	(5,261)
2017 Net Sales	\$1,396,588	\$2,485,168	\$3,881,756

Net sales increased by \$950.6 million to \$3,881.8 million in 2017 from \$2,931.2 million in 2016. The increase is due to sales from acquisitions of \$1,183.2 million with the majority related to the Faiveley Transport acquisition. This increase was partially offset by a \$156.0 million decrease for Specialty Products and Electronics due to lower demand for freight original equipment rail products and train control and signaling products and services, a \$68.6 million decrease for Remanufacturing, Overhaul and Build primarily due to the absence of a large locomotive rebuild contract that completed in 2016, and a \$49.1 million decrease for Brake products due to lower demand for original equipment brakes from freight and transit customers. Unfavorable foreign exchange decreased sales \$5.3 million.

Freight Segment sales decreased by \$146.5 million, or 9.5%, primarily due to a \$164.5 million decrease for Specialty Products and Electronics sales from lower demand for freight original equipment rail products and train control and signaling products attributable to lower freight car and locomotive builds, a decrease of \$79.1 million for Remanufacturing, Overhaul and Build sales due to a large locomotive rebuild contract that was completed in 2016, and a \$51.6 million decrease in Brake Products sales from lower demand for original equipment brakes and aftermarket services. Acquisitions increased sales by \$148.1 million and favorable foreign exchange increased sales by \$1.1 million.

Transit Segment sales increased by \$1,097.1 million, or 79.0%, primarily due to an increase in sales from acquisitions of \$1,035.1 million with the majority related to the Faiveley Transport acquisition. Additionally, Transit Products sales increased \$45.5 million from increased demand in original train doors, air conditioning systems, and other transit electronics, Overhaul & Build sales increased \$10.5 million due to an increase in transit overhaul demand, and Specialty Products & Electronics sales increased \$8.5 million due to increased demand for transit train control and signaling products and services. Unfavorable foreign exchange decreased sales by \$6.4 million.

Cost of Sales and Gross Profit The following table shows the major components of cost of sales for the periods indicated:

		For the year ended December 31, 2017					
In thousands	Freight	Percentage of Sales	Transit	Percentage of Sales	Total	Percentage of Sales	
Material	\$526,727	37.7 %	\$1,123,571	45.2 %	\$1,650,298	42.5 %	
Labor	186,863	13.4 %	339,110	13.6 %	525,973	13.5 %	
Overhead	233,786	16.7 %	341,389	13.7 %	575,175	14.8 %	
Other/Warranty	7,148	0.5 %	57,849	2.3 %	64,997	1.7 %	
Total cost of sales	\$954,524	68.3 %	\$1,861,919	74.8 %	\$2,816,443	72.5 %	

		For the year ended December 31, 2016					
In thousands	Freight	Percentage of Sales	Transit	Percentage of Sales	Total	Percentage of Sales	
Material	\$590,876	38.3 %	\$587,516	42.3 %	\$1,178,392	40.2 %	
Labor	176,518	11.4 %	170,481	12.3 %	346,999	11.8 %	
Overhead	242,956	15.7 %	213,821	15.4 %	456,777	15.6 %	
Other/Warranty	5,575	0.4 %	19,206	1.4 %	24,781	0.8 %	
Total cost of sales	\$1,015,925	65.8 %	\$991,024	71.4 %	\$2,006,949	68.4 %	

Cost of sales increased by \$809.5 million to \$2,816.4 million in 2017 compared to \$2,006.9 million in the same period of 2016. For the twelve months ended 2017, cost of sales as a percentage of sales was 72.5% compared to 68.4% in the same period of 2016. The increase as a percentage of sales is due to product mix largely attributable to higher transit segment sales due to acquisitions, along with an unfavorable product mix within the freight segment. Also contributing to the increase were higher project adjustments of \$44.5 million recorded on certain existing contracts and \$11.8 million of restructuring and integration costs related to recent acquisitions.

Freight Segment cost of sales increased 2.5% as a percentage of sales to 68.3% in 2017 compared to 65.8% for the same period of 2016. The increase is primarily related to lower demand for freight original equipment rail products and train control and signaling products and services which typically offer a higher margin, higher project adjustments of \$6.9 million on certain existing contracts related to labor, material and warranty costs, and \$4.5 million of restructuring and integration costs related to recent acquisitions.

Transit Segment cost of sales increased 3.4% as a percentage of sales to 74.8% in 2017 compared to 71.4% for the same period in 2016. The increase is primarily related to product mix largely attributable to the acquisition of Faiveley Transport, which has lower overall margins and higher project adjustments of \$37.6 million on certain existing contracts primarily related to material and warranty costs and \$7.3 million of restructuring and integration costs related to recent acquisitions.

Included in cost of sales is warranty expense. The provision for warranty expense is generally established for specific losses, along with historical estimates of customer claims as a percentage of sales, which can cause variability in warranty expense between quarters. Warranty expense was \$50.4 million in 2017 compared to \$28.9 million in 2016. The increase in warranty expense is primarily related to the increase in sales and the contract adjustments noted above.

Operating expenses The following table shows our operating expenses:

For the year ended December 31,

In thousands	2017	Percentage of Sales	2016	Percentage of Sales
Selling, general and administrative expenses	\$512,552	13.2 %	\$373,559	12.7 %
Engineering expenses	95,166	2.5 %	71,375	2.4 %
Amortization expense	36,516	0.9 %	22,698	0.8 %
Total operating expenses	\$644,234	16.6 %	\$467,632	15.9 %

Total operating expenses were 16.6% and 15.9% of sales for 2017 and 2016, respectively. Selling, general, and administrative expenses increased \$139.0 million, or 37.2%, primarily due to \$174.7 million in incremental expense from acquisitions partially offset by lower costs due to cost saving initiatives and lower organic sales volumes. Engineering expense increased \$23.8 million or 33.3% primarily due to additional expenses from acquisitions and remained a relatively consistent as a percentage of sales. Amortization expense increased \$13.8 million due to amortization of intangibles associated with new acquisitions.

The following table shows our segment operating expenses:

For the year ended December 31,

In thousands	2017	2016	Percent Change
Freight Segment	\$177,787	\$183,595	(3.2)%
Transit Segment	435,031	226,497	92.1 %
Corporate	31,416	57,540	(45.4)%
Total operating expenses	\$644,234	\$467,632	37.8 %

Freight Segment operating expenses decreased \$5.8 million, or 3.2%, in 2017 and increased 80 basis points to 12.7% of sales. The decrease is primarily attributable to reduced sales volumes and realized benefits associated with the cost saving initiatives undertaken in 2017 partially offset by \$19.7 million of incremental operating expenses from acquisitions and \$3.2 million related to integration and restructuring costs.

Transit Segment operating expenses increased \$208.5 million, or 92.1%, in 2017 and increased 120 basis points to 17.5% of sales. The increase is primarily related to \$191 million of incremental operating expenses related to acquisitions and \$20 million related to integration and restructuring costs related to recent acquisitions.

Corporate non-allocated operating expenses decreased \$26.1 million in 2017 primarily due to a decrease in Faiveley Transport transaction and integration costs as well as benefits from cost savings initiatives undertaken in 2017 and 2016.

Interest expense, net Overall interest expense, net, increased \$27.6 million in 2017 due to a higher overall debt balance in 2017 compared to 2016, primarily related to the Faiveley Transport acquisition and higher interest rates.

Other (expense) income, net Other income, net, increased \$2.3 million to \$8.9 million for 2017, compared to 2016 primarily due to an increase in equity income earned on unconsolidated subsidiaries.

Income taxes The effective income tax rate was 25.5% and 24.1% in 2017 and 2016, respectively. On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "U.S. tax reform bill"). On December 23, 2017, the French government enacted the Finance Act for 2018 and it was published in the Official Bulletin on December 31, 2017. As a result, tax expense increased by \$55.0 million related to the U.S. tax reform bill, see Note 12 of "Notes to Consolidated Financial Statements" included in Part IV, Item 8 of this report for further explanation. This was offset by decreases of \$50.7 million primarily due to the revaluation of the net U.S. and French deferred tax liabilities as a result of the tax law enactments and the result of a lower earnings mix in higher tax rate jurisdictions. The net favorable deferred tax benefits related to the adjustment of deferred tax liabilities which had originally been established in prior periods.

Liquidity and Capital Resources

Liquidity is provided by operating cash flow and borrowings under the Company's unsecured credit facility with a consortium of commercial banks. The following is a summary of selected cash flow information and other relevant data:

In thousands	For the year ended		
	December 31,		
	2018	2017	2016
Cash provided by (used for):			
Operating activities	\$314,671	\$188,811	\$450,530
Investing activities	(147,287)	(1,033,474)	(232,966)
Financing activities:			
Proceeds from debt	3,480,702	1,216,740	1,875,000
Payments of debt	(1,453,954)	(1,269,537)	(1,102,748)
Stock repurchases	—	—	(212,176)
Cash dividends	(46,277)	(42,218)	(32,430)

Operating activities. Cash provided by operations in 2018 was \$314.7 million compared with \$188.8 million in 2017. In comparison to 2017, cash provided by operations increased due to favorable working capital performance and higher net income of \$29.4 million. The major components of the increase in cash provided by operations were as follows: a favorable change in accounts payable of \$140.5 million due to the timing of payments to suppliers, a favorable change in taxes of \$22.4 million due to the revaluation of deferred taxes caused by the Tax Cut and Jobs Act (the "Tax Act") and the timing of income tax payments, and a favorable change in accrued liabilities and customer deposits of \$50.6 million due to an increase in customer advances during 2018. These favorable changes in working capital were offset by an unfavorable change in inventory of \$99.9 million due to efforts to ramp up production in anticipation of stronger product demand in 2019.

Cash provided by operations in 2017 was \$188.8 million compared with \$450.5 million in 2016. In comparison to 2016, cash provided by operations decreased due to unfavorable working capital performance and lower net income of \$51.1 million. The major components of working capital were as follows: an unfavorable change of \$88.4 million in accounts receivable primarily due to higher sales, an unfavorable change in accounts payable of \$72.8 million due to the timing of payments to suppliers, an unfavorable change of \$25.4 million in other assets and liabilities primarily due to an unfavorable change in accrued liabilities due to payments related to contract liabilities, accrued expenses, and acquisition costs in 2017, and an unfavorable change in inventory of \$54.3 million due to efforts to ramp up production in anticipation of stronger product demand in 2018.

Investing activities. In 2018, 2017 and 2016, cash used in investing activities was \$147.3 million, \$1,033.5 million and \$233.0 million, respectively. The major components of the cash outflow in 2018 were planned additions to property, plant, and equipment of \$93.3 million for continued investments in our facilities and manufacturing processes and \$51.2 million in net cash paid for acquisitions. These outflows were partially offset by \$11.3 million in proceeds from disposal of property, plant, and equipment. This compares to \$89.5 million for property, plant, and equipment and \$945.3 million in net cash paid for acquisitions in 2017, primarily related to the acquisition of Faiveley Transport. In 2016, \$50.2 million of cash was used to purchase property, plant, and equipment and net cash paid for acquisitions was \$183.1 million.

Financing activities. In 2018, cash provided by financing activities was \$1,978.1 million, which included \$2,500.0 million in proceeds from new borrowings, \$980.7 million in proceeds from the revolving credit facility, \$1,453.9 million in repayments of debt, and \$46.3 million of dividend payments. In 2017, cash used for financing activities was \$97.4 million, which included \$1,216.7 million in proceeds from the revolving credit facility debt, \$1,269.5 million of repayments of debt on the revolving credit facility, and dividend payments of \$42.2 million. In 2016, cash provided by financing activities was \$523.0 million, which included \$1,125.0 million in proceeds from the revolving credit facility debt, \$770.0 million of repayments of debt on the revolving credit facility, \$332.7 million in repayments of other debt, which was primarily driven by repayments of debt acquired from the purchase of Faiveley Transport, \$750.0 million

of new borrowings on the 2026 Senior Notes, \$32.4 million of dividend payments and \$212.2 million of Wabtec stock repurchases.

The following table shows outstanding indebtedness at December 31, 2018 and 2017:

In thousands	December 31,	
	2018	2017
Floating Senior Notes, due 2021, net of unamortized debt issuance costs of \$3,204	\$496,796	\$—
4.150% Senior Notes, due 2024, net of unamortized debt issuance costs of \$7,043	742,957	—
4.70% Senior Notes, due 2028, net of unamortized debt issuance costs of \$10,343	1,239,657	—
3.45% Senior Notes, due 2026, net of unamortized debt issuance costs of \$1,718 and \$2,345	748,282	747,655
4.375% Senior Notes, due 2023, net of unamortized discount and debt issuance costs of \$1,177 and \$1,433	248,823	248,567
Revolving Credit Facility, net of unamortized debt issuance costs of \$3,138 and \$2,451	338,112	853,124
Other Borrowings	42,246	21,182
Total	3,856,873	1,870,528
Less - current portion	64,099	47,225
Long-term portion	\$3,792,774	\$1,823,303

On September 14, 2018 the Company issued \$2.5 billion of senior notes with three different maturities.

Floating Rate Senior Notes due 2021 - The Company issued \$500.0 million of Floating Rate Senior Notes due 2021 (the "Floating Rate Notes"). The Floating Rate Notes, which are non-callable for one year, were issued at 100% of face value. Interest on the Floating Rate Notes accrues at a floating rate per annum equal to three-month Libor plus 105 basis points. The interest rate for the Floating Rate Notes for the initial interest period was the three-month Libor plus 105 basis points determined on September 12, 2018 and is payable quarterly on December 15, March 15, June 15, and September 15 of each year. The Company incurred \$3.5 million of deferred financing costs related to the issuance of the Floating Rate Notes.

4.150% Senior Notes due 2024 - The Company issued \$750.0 million of 4.150% Senior Notes due 2024 (the "2024 Notes"). The 2024 Notes were issued at 99.805% of face value. Interest on the 2024 Notes accrues at a rate of 4.150% per annum and is payable semi-annually on March 15 and September 15 of each year. The Company incurred \$7.4 million of deferred financing costs related to the issuance of the 2024 Notes.

4.70% Senior Notes Due 2028 - The Company issued \$1,250.0 million of 4.70% Senior Notes due 2028 (the "2028 Notes" and together with the Floating Rate Notes and 2024 Notes, the "Senior Notes"). The 2028 Notes were issued at 99.889% of face value. Interest on the 2028 Notes accrues at a rate of 4.700% per annum and is payable semi-annually on March 15 and September 15 of each year. The Company incurred \$10.6 million of deferred financing costs related to the issuance of the 2028 Notes.

The net proceeds from the issuance and sale of the Senior Notes was used to finance the cash portion of the GE Transportation acquisition. The principal balances are due in full at maturity. The Senior Notes are senior unsecured obligations of the Company and rank pari passu with all existing and future senior debt and senior to all existing and future subordinated indebtedness of the Company. The indenture under which the Senior Notes were issued contains covenants and restrictions which limit among other things, the following: the incurrence of indebtedness, payment of dividends and certain distributions, sales of assets, change in control, mergers and consolidations and the incurrence of liens.

On February 12, 2019, the rating assigned by Moody's was decreased to Ba1. Accordingly, pursuant to the respective terms of the Senior Notes issued on September 14, 2018, the interest rate will be increased by 0.25%. The interest rate increase will take effect from the next interest period following February 12, 2019.

The Company is in compliance with the restrictions and covenants in the indenture under which the Senior Notes were issued and expects that these restrictions and covenants will not be any type of limiting factor in executing our operating activities.

3.45% Senior Notes Due November 2026

In October 2016, the Company issued \$750.0 million of Senior Notes due in 2026 (the “2016 Notes”). The 2016 Notes were issued at 99.965% of face value. Interest on the 2016 Notes accrues at a rate of 3.45% per annum and is payable semi-annually on May 15 and November 15 of each year. The proceeds were used to finance the cash portion of the Faiveley

Transport acquisition, refinance Faiveley Transport's indebtedness, and for general corporate purposes. The principal balance is due in full at maturity. The Company incurred \$2.7 million of deferred financing costs related to the issuance of the 2016 Notes.

The 2016 Notes are senior unsecured obligations of the Company and rank pari passu with all existing and future senior debt and senior to all existing and future subordinated indebtedness of the Company. The indenture under which the 2016 Notes were issued contains covenants and restrictions which limit among other things, the following: the incurrence of indebtedness, payment of dividends and certain distributions, sale of assets, change in control, mergers and consolidations and the incurrence of liens.

The Company is in compliance with the restrictions and covenants in the indenture under which the 2016 Notes were issued and expects that these restrictions and covenants will not be any type of limiting factor in executing our operating activities.

4.375% Senior Notes Due August 2023

In August 2013, the Company issued \$250.0 million of Senior Notes due in 2023 (the "2013 Notes"). The 2013 Notes were issued at 99.879% of face value. Interest on the 2013 Notes accrues at a rate of 4.375% per annum and is payable semi-annually on February 15 and August 15 of each year. The proceeds were used to repay debt outstanding under the Company's existing credit agreement, and for general corporate purposes. The principal balance is due in full at maturity. The Company incurred \$2.6 million of deferred financing costs related to the issuance of the 2013 Notes.

The 2013 Notes are senior unsecured obligations of the Company and rank pari passu with all existing and future senior debt and senior to all existing and future subordinated indebtedness of the Company. The indenture under which the 2013 Notes were issued contains covenants and restrictions which limit among other things, the following: the incurrence of indebtedness, payment of dividends and certain distributions, sale of assets, change in control, mergers and consolidations and the incurrence of liens.

The Company is in compliance with the restrictions and covenants in the indenture under which the 2013 Notes were issued and expects that these restrictions and covenants will not be any type of limiting factor in executing our operating activities.

2018 Refinancing Credit Agreement

On June 8, 2018, the Company entered into a credit agreement (the "2018 Refinancing Credit Agreement"), which replaced the Company's then-existing "2016 Refinancing Credit Agreement." As part of the 2018 Refinancing Credit Agreement, the Company entered into (i) a \$1.2 billion revolving credit facility (the "Revolving Credit Facility"), which replaced the Company's revolving credit facility under the 2016 Refinancing Credit Agreement, and includes a letter of credit sub-facility of up to \$450.0 million and a swing line sub-facility of \$75.0 million, (ii) a \$350.0 million term loan (the "Refinancing Term Loan"), which refinanced the term loan under the 2016 Refinancing Credit Agreement, and (iii) a new \$400.0 million delayed draw term loan (the "Delayed Draw Term Loan"). The 2018 Refinancing Credit Agreement also provided for a bridge loan facility (the "Bridge Loan Facility") in an amount not to exceed \$2.5 billion, such facility to become effective at the Company's request. Commitments in respect of the Bridge Loan Facility were terminated upon the issuance and sale of the Senior Notes on September 14, 2018. In addition, the 2018 Refinancing Credit Agreement contains an uncommitted accordion feature allowing the Company to request, in an aggregate amount not to exceed \$600.0 million, increases to the borrowing commitments under the Revolving Credit Facility or a new incremental term loan commitment. At December 31, 2018, the Company had available bank borrowing capacity, net of \$29.2 million of letters of credit, of approximately \$1,170.8 million subject to certain financial covenant restrictions.

The Revolving Credit Facility matures on June 8, 2023 and is unsecured. The Refinancing Term Loan matures on June 8, 2021 and is unsecured. The Delayed Draw Term Loan matures on the third anniversary of the date on which it is borrowed and is unsecured. The applicable interest rate for borrowings under the 2018 Refinancing Credit Agreement includes interest rate spreads based on the lower of the pricing corresponding to (i) the Company's ratio of total debt (less unrestricted cash up to \$300.0 million) to EBITDA ("Leverage Ratio") or (ii) the Company's public rating, in each case that range between 1.000% and 1.875% for LIBOR/CDOR-based borrowings and 0.0% and 0.875% for Alternate Base Rate based borrowings. The obligations of the Company under the 2018 Refinancing

Credit Agreement have been guaranteed by certain of the Company's subsidiaries.

The 2018 Refinancing Credit Agreement contains customary representations and warranties by the Company and its subsidiaries, including customary use of materiality, material adverse effect, and knowledge qualifiers. The Company and its subsidiaries are also subject to (i) customary affirmative covenants that impose certain reporting obligations on the Company and its subsidiaries and (ii) customary negative covenants, including limitations on: indebtedness; liens; restricted payments;

37

fundamental changes; business activities; transactions with affiliates; restrictive agreements; changes in fiscal year; and use of proceeds. In addition, the Company is required to maintain (i) an Interest Coverage ratio at least 3.00 to 1.00 over each period of four consecutive fiscal quarters ending on the last day of a fiscal quarter and (ii) a Leverage Ratio, calculated as of the last day of a fiscal quarter for a period of four consecutive fiscal quarters, of 3.25 to 1.00 or less; provided that, in the event the Company completes the Direct Sale and the Merger or any other material acquisition in which the cash consideration paid exceeds \$500.0 million, the maximum Leverage Ratio permitted will be 3.75 to 1.00 at the end of the fiscal quarter in which such acquisition is consummated and each of the three fiscal quarters immediately following such fiscal quarter and 3.50 to 1.00 at the end of each of the fourth and fifth full fiscal quarters after the consummation of such acquisition. The Company is in compliance with the restrictions and covenants of the 2018 Refinancing Credit Agreement and does not expect that these measurements will limit the Company in executing its operating activities.

At December 31, 2018, the weighted average interest rate on the Company's variable rate debt was 3.68%. On June 5, 2014, the Company entered into a forward starting interest rate swap agreement with a notional value of \$150.0 million. The effective date of the interest rate swap agreement was November 7, 2016, and the termination date was December 19, 2018.

2016 Refinancing Credit Agreement

On June 22, 2016, the Company amended its existing revolving credit facility with a consortium of commercial banks. This "2016 Refinancing Credit Agreement" provided the Company with a \$1.2 billion, 5 year revolving credit facility and a \$400.0 million delayed draw term loan (the "Term Loan"). The Company incurred approximately \$3.3 million of deferred financing cost related to the 2016 Refinancing Credit Agreement. The 2016 Refinancing Credit Agreement borrowings bore variable interest rates indexed as described below.

Under the 2016 Refinancing Credit Agreement, the Company could elect a Base Rate of interest for U.S. Dollar denominated loans or, for certain currencies, an interest rate based on the London Interbank Offered Rate ("LIBOR") of interest, or other rates appropriate for such currencies (in any case, "the Alternate Rate"). The Base Rate adjusted on a daily basis and was the greater of the Federal Funds Effective Rate plus 0.50% per annum, the PNC, N.A. prime rate or the Daily LIBOR Rate plus 100 basis points, plus a margin that ranged from 0 to 75 basis points. The Alternate Rate was based on the quoted rates specific to the applicable currency, plus a margin that ranged from 75 to 175 basis points. Both the Base Rate and Alternate Rate margins were dependent on the Company's consolidated total indebtedness to EBITDA ratios. The initial Base Rate margin was 0 basis points and the Alternate Rate margin was 175 basis points.

Contractual Obligations and Off-Balance Sheet Arrangements

The Company is obligated to make future payments under various contracts such as debt agreements, lease agreements and has certain contingent commitments such as debt guarantees. The Company has grouped these contractual obligations and off-balance sheet arrangements into operating activities, financing activities, and investing activities in the same manner as they are classified in the Statement of Consolidated Cash Flows to provide a better understanding of the nature of the obligations and arrangements and to provide a basis for comparison to historical information. The table below provides a summary of contractual obligations and off-balance sheet arrangements as of December 31, 2018:

In thousands	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Operating activities:					
Purchase obligations (1)	\$ 149,624	\$ 38,777	\$ 46,276	\$ 23,176	\$ 41,395
Operating leases (2)	190,410	36,429	55,417	35,503	63,061
Pension benefit payments (3)	167,825	14,789	30,848	33,108	89,080
Postretirement benefit payments (4)	10,065	1,158	2,221	2,113	4,573
Financing activities:					
Interest payments (5)	1,068,729	158,450	302,129	250,191	357,959
Long-term debt (6)	3,856,873	64,099	801,367	248,927	2,742,480
Dividends to shareholders (7)	46,375	46,375	—	—	—
Other:					
Standby letters of credit (8)	354,176	14,566	121,443	112,879	105,288
Total	\$ 5,844,077	\$ 374,643	\$ 1,359,701	\$ 705,897	\$ 3,403,836

Purchase obligations represent non-cancelable contractual obligations at December 31, 2018. In addition, the Company had \$441.9 million of open purchase orders for which the related goods or services had not been (1) received. Although open purchase orders are considered enforceable and legally binding, their terms generally allow us the option to cancel, reschedule and adjust our requirements based on our business needs prior to the delivery of goods or performance of services.

Future minimum payments for operating leases are disclosed by year in Note 16 of the “Notes to Consolidated (2) Financial Statements” included in Part IV, Item 15 of this report.

Annual payments to participants are expected to continue into the foreseeable future at the amounts or ranges noted. Pension benefit payments are based on actuarial estimates using current assumptions for discount rates, (3) expected return on long-term assets and rate of compensation increases. The Company expects to contribute about \$6.4 million to pension plan investments in 2019. See further disclosure in Note 11 of the “Notes to Consolidated Financial Statements” included in Part IV, Item 15 of this report.

Annual payments to participants are expected to continue into the foreseeable future at the amounts or ranges (4) noted. Postretirement payments are based on actuarial estimates using current assumptions for discount rates and health care costs. See further disclosure in Note 11 of the “Notes to Consolidated Financial Statements” included in Part IV, Item 15 of this report.

Interest payments are payable March, June, September and December of each year at a rate based on contractual terms of Floating Senior Notes due 2021. Interest payments are payable May and September of each year at 4.15% (5) of \$750 million Senior Notes due 2024. Interest payments are payable March and September of each year at 4.7% of \$1,250 million Senior Note due 2028. Interest payments are payable May and November of each year at 3.45% of \$750 million Senior Notes due in 2026. Interest payments are payable February and August of each year at 4.375% of \$250 million Senior Notes due in 2023. Interest payments for the Revolving Credit Facility and Other Borrowings are based on contractual terms and the Company’s current interest rates.

Scheduled principal repayments of outstanding loan balances are disclosed in Note 10 of the “Notes to Consolidated (6) Financial Statements” included in Part IV, Item 15 of this report.

(7)

Shareholder dividends are subject to approval by the Company's Board of Directors, currently at an annual rate of approximately \$46.4 million.

The \$354.2 million of standby letters of credit is comprised of outstanding letters of credit for performance and bid (8) bond purposes, which expire in various dates through 2025. Amounts include interest payments based on contractual terms and the Company's current interest rate.

The above table does not reflect uncertain tax positions of \$9.5 million, the timing of which are uncertain. Refer to Note 12 of the "Notes to Consolidated Financial Statements" for additional information on uncertain tax positions.

Obligations for operating activities. The Company has entered into \$149.6 million of material long-term non-cancelable materials and supply purchase obligations. Operating leases represent multi-year obligations for rental of facilities and equipment. Estimated pension funding and post-retirement benefit payments are based on actuarial estimates using current assumptions for discount rates, expected return on long-term assets, rate of compensation increases and health care cost trend rates. Benefits paid for pension obligations were \$16.9 million and \$16.0 million in 2018 and 2017, respectively. Benefits paid for post-retirement plans were \$1.0 million and \$1.2 million in 2018 and in 2017, respectively.

Obligations for financing activities. Cash requirements for financing activities consist primarily of long-term debt repayments, interest payments and dividend payments to shareholders. The Company has historically paid quarterly dividends to shareholders, subject to quarterly approval by our Board of Directors, currently at a rate of approximately \$46.4 million annually.

The Company arranges for performance bonds to be issued by third party insurance companies to support certain long term customer contracts. At December 31, 2018, the initial value of performance bonds issued on the Company's behalf is about \$507 million.

Forward Looking Statements

We believe that all statements other than statements of historical facts included in this report, including certain statements under "Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," may constitute forward-looking statements. We have based these forward-looking statements on our current expectations and projections about future events. Although we believe that our assumptions made in connection with the forward-looking statements are reasonable, we cannot assure that our assumptions and expectations are correct.

These forward-looking statements are subject to various risks, uncertainties and assumptions about us, including, among other things:

Economic and industry conditions

prolonged unfavorable economic and industry conditions in the markets served by us, including North America, South America, Europe, Australia, Asia and South Africa;

decline in demand for freight cars, locomotives, passenger transit cars, buses and related products and services;

reliance on major original equipment manufacturer customers;

original equipment manufacturers' program delays;

demand for services in the freight and passenger rail industry;

demand for our products and services;

orders either being delayed, canceled, not returning to historical levels, or reduced or any combination of the foregoing;

consolidations in the rail industry;

continued outsourcing by our customers;

industry demand for faster and more efficient braking equipment;

fluctuations in interest rates and foreign currency exchange rates; or

availability of credit;

Operating factors

supply disruptions;

technical difficulties;

changes in operating conditions and costs;

increases in raw material costs;

successful introduction of new products;

performance under material long-term contracts;

labor relations;

the outcome of our existing or any future legal proceedings, including litigation involving our principal customers and any litigation with respect to environmental matters, asbestos-related matters, pension liabilities, warranties, product liabilities or intellectual property claims;

• completion and integration of acquisitions, including the acquisition of Faiveley Transport and GE Transportation; or
• the development and use of new technology;

Competitive factors

• the actions of competitors; or

• the outcome of negotiations with partners, suppliers, customers or others;

40

Political/governmental factors

political stability in relevant areas of the world;
future regulation/deregulation of our customers and/or the rail industry;
levels of governmental funding on transit projects, including for some of our customers;
political developments and laws and regulations, including those related to Positive Train Control; or
federal and state income tax legislation; and
the outcome of negotiations with governments.

Statements in this 10-K apply only as of the date on which such statements are made, and we undertake no obligation to update any statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events.

Critical Accounting Estimates

The preparation of the financial statements in accordance with generally accepted accounting principles requires Management to make judgments, estimates and assumptions regarding uncertainties that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities and the reported amounts of revenues and expenses. Areas of uncertainty that require judgments, estimates and assumptions include the accounting for allowance for doubtful accounts, inventories, the testing of goodwill and other intangibles for impairment, warranty reserves, pensions and other postretirement benefits, stock based compensation and tax matters. Management uses historical experience and all available information to make these judgments and estimates, and actual results will inevitably differ from those estimates and assumptions that are used to prepare the Company's financial statements at any given time. Despite these inherent limitations, Management believes that Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) and the financial statements and related footnotes provide a meaningful and fair perspective of the Company. A discussion of the judgments and uncertainties associated with accounting for derivatives and environmental matters can be found in Notes 2 and 19, respectively, in the "Notes to Consolidated Financial Statements" included in Part IV, Item 15 of this report.

A summary of the Company's significant accounting policies is included in Note 2 in the "Notes to Consolidated Financial Statements" included in Part IV, Item 15 of this report and is incorporated by reference herein. Management believes that the application of these policies on a consistent basis enables the Company to provide the users of the financial statements with useful and reliable information about the Company's operating results and financial condition.

Accounts Receivable and Allowance for Doubtful Accounts:

Description The Company provides an allowance for doubtful accounts to cover anticipated losses on uncollectible accounts receivable.

Judgments and Uncertainties The allowance for doubtful accounts receivable reflects our best estimate of probable losses inherent in our receivable portfolio determined on the basis of historical experience, specific allowances for known troubled accounts and other currently available evidence.

Effect if Actual Results Differ From Assumptions If our estimates regarding the collectability of troubled accounts, and/or our actual losses within our receivable portfolio exceed our historical experience, we may be exposed to the expense of increasing our allowance for doubtful accounts.

Inventories:

Description Inventories are stated at the lower of cost or market and are reviewed to ensure that an adequate provision is recognized for excess, slow moving and obsolete inventories.

Judgments and Uncertainties Cost is determined under the first-in, first-out (FIFO) method. Inventory costs include material, labor and overhead. The Company compares inventory components to prior year sales history and current backlog and anticipated future requirements. To the extent that inventory parts exceed estimated usage and demand, a reserve is recognized to reduce the carrying value of inventory. Also, specific reserves are established for known inventory obsolescence.

Effect if Actual Results Differ From Assumptions If the market value of our products were to decrease due to changing market conditions, the Company could be at risk of incurring write-downs to adjust inventory value to a market value lower than stated cost. If our estimates regarding sales and backlog requirements are inaccurate, we may be exposed to the expense of increasing our reserves for slow moving and obsolete inventory.

Goodwill and Indefinite-Lived Intangibles:

Description Goodwill and indefinite-lived intangibles are required to be tested for impairment at least annually. The Company performs its annual impairment test during the fourth quarter and more frequently when indicators of impairment are present. The Company reviews goodwill for impairment at the reporting unit level. The evaluation of impairment involves comparing the current fair value of the business to the recorded value (including goodwill).

Judgments and Uncertainties A number of significant assumptions and estimates are involved in the application of the impairment test, including the identification of macroeconomic conditions, industry and market considerations, cost factors, overall financial performance, Wabtec specific events and share price trends and making the assessment on whether each relevant factor will impact the impairment test positively or negatively and the magnitude of any such amount.

Effect if Actual Results Differ From Assumptions Management considers historical experience and all available information at the time the fair values of its reporting units are estimated. However, actual amounts realized may differ from those used to evaluate the impairment of goodwill. If actual results are not consistent with our assumptions and judgments used in estimating future cash flows and asset fair values, we may be exposed to impairment losses that could be material to our results of operations. For example, based on the quantitative analysis performed as of October 1, 2018, a decline in the terminal growth rate by 50 basis points would decrease fair market value by \$398 million, or an increase in the weighted-average cost of capital by 100 basis points would result in a decrease in fair market value by \$1,156 million. Even with such changes the fair value of the reporting units would be greater than their net book values, necessitating no Step 2 calculations. See Note 2 in the “Notes to Consolidated Financial Statements” included in Part IV, Item 15 of this report for additional discussion regarding impairment testing.

Warranty Reserves:

Description The Company provides warranty reserves to cover expected costs from repairing or replacing products with durability, quality or workmanship issues occurring during established warranty periods.

Judgments and Uncertainties In general, reserves are provided for as a percentage of sales, based on historical experience. In addition, specific reserves are established for known warranty issues and their estimable losses.

Effect if Actual Results Differ From Assumptions If actual results are not consistent with the assumptions and judgments used to calculate our warranty liability, the Company may be at risk of realizing material gains or losses.

Accounting for Pensions and Postretirement Benefits:

Description The Company provides pension and postretirement benefits for its employees. These amounts are determined using actuarial methodologies and incorporate significant assumptions, including the rate used to discount the future estimated liability, the long-term rate of return on plan assets and several assumptions relating to the employee workforce (salary increases, medical costs, retirement age and mortality).

Judgments and Uncertainties Significant judgments and estimates are used in determining the liabilities and expenses for pensions and other postretirement benefits. The rate used to discount future estimated liabilities is determined considering the rates available at year-end on debt instruments that could be used to settle the obligations of the plan. The long-term rate of return is estimated by considering historical returns and expected returns on current and projected asset allocations and is generally applied to a five-year average market value of assets. The differences between actual and expected asset returns are recognized in expense using the normal amortization of gains and losses per ASC 715.

Effect if Actual Results Differ From Assumptions If assumptions used in determining the pension and other postretirement benefits change significantly, these costs can fluctuate materially from period to period. The key assumptions in determining the pension and other postretirement expense and obligation include the discount rate, expected return on assets and health care cost trend rate. For example, a 1% decrease or increase in the discount rate used in determining the pension and postretirement expense would increase expense \$1.1 million or decrease expense \$1.9 million, respectively. A 1% decrease or increase in the discount rate used in determining the pension and postretirement obligation would increase the obligation \$43.8 million or decrease the obligation \$54.8 million, respectively. A 1% decrease or increase in the expected return on assets used in determining the pension expense would increase or decrease expense \$2.8 million. If the actual asset values at December 31, 2018 had been 1% lower, the amortization of losses in the following year would decrease \$0.2 million.

Stock-based Compensation:

Description The Company has issued incentive stock units to eligible employees that vest upon attainment of certain cumulative three-year performance goals. The program is structured as a rolling three-year plan; each year starts a new three-

42

year performance cycle with the most recently completed cycle being 2016-2018. No incentive stock units will vest for performance below the three-year cumulative threshold. The Company utilizes an economic profit measure for this performance goal. Economic profit is a measure of the extent to which the Company produces financial results in excess of its cost of capital. Based on the Company's achievement of the threshold and three-year cumulative performance, the stock units vested can range from 0% to 200% of the shares granted.

Judgments and Uncertainties Significant judgments and estimates are used in determining the estimated three-year performance, which is then used to estimate the total shares expected to vest over the three year vesting cycle and corresponding expense based on the grant date fair value of the award. When determining the estimated three-year performance, the Company utilizes a combination of historical actual results, budgeted results and forecasts. In the initial grant year of a performance cycle, the Company estimates the three-year performance at 100%. As actual performance results for a cycle begin to accumulate and the Company completes its budgeting and forecasting cycles the performance estimates are updated. These judgments and estimates are reviewed and updated on a quarterly basis.

Effect if Actual Results Differ From Assumptions If assumptions used in determining the estimated three-year performance change significantly, stock-based compensation expense related to the unvested incentive stock awards can fluctuate materially from period to period. For example, a 10% decrease or increase in the estimated vesting percentage for incentive stock awards would decrease or increase stock-based compensation expense by approximately \$1.5 million and \$1.5 million, respectively.

Income Taxes:

Description Wabtec records an estimated liability or benefit for income and other taxes based on what it determines will likely be paid in various tax jurisdictions in which it operates in accordance with ASC 740-10 Accounting for Income Taxes and Accounting for Uncertainty in Income Taxes.

Judgments and Uncertainties The estimate of our tax obligations are uncertain because Management must use judgment to estimate the exposures associated with our various filing positions, as well as realization of our deferred tax assets. ASC 740-10 establishes a recognition and measurement threshold to determine the amount of tax benefit that should be recognized related to uncertain tax positions.

Effect if Actual Results Differ From Assumptions Management uses its best judgment in the determination of these amounts. However, the liabilities ultimately realized and paid are dependent on various matters including the resolution of the tax audits in the various affected tax jurisdictions and may differ from the amounts recorded. An adjustment to the estimated liability would be recorded through income in the period in which it becomes probable that the amount of the actual liability differs from the recorded amount. A deferred tax valuation allowance is provided when it is more likely than not that some portion or all of the deferred tax assets will not be realized.

Revenue Recognition:

Description Revenue is recognized in accordance with ASC 606 "Revenue from Contracts with Customers." The Company recognizes revenues on long-term customer agreements involving the design and production of highly engineered products that require revenue to be recognized over time because these products have no alternative use with significant economic loss and the agreements contain an enforceable right to payment including a reasonable profit margin from the customer in the event of contract termination. Generally, the Company uses an input method for determining the amount of revenue, cost and gross margin to recognize over time for these customer agreements. The input methods used for these agreements include costs of material and labor, both of which give an accurate representation of the progress made toward complete satisfaction of a particular performance obligation.

Judgments and Uncertainties Accounting for long-term customer agreements involves a judgmental process of estimating the total sales and costs for each contract, which results in the development of estimated profit margin percentages. Contract estimates related to long-term projects are based on various assumptions to project the outcome of future events that could span several years. These assumptions include cost of materials; labor availability and productivity; complexity of the work to be performed; and the performance of suppliers, customers and subcontracts that may be associated with the contract. Factors that influence these estimates include inflationary trends, technical and schedule risk, internal and subcontractor performance trends, business volume assumptions, asset utilization, and anticipated labor agreements. Generally, pricing is defined in our contracts but may contain include an estimate of variable consideration when required by the terms of the individual customer contract. Types of variable consideration that the Company typically has include volume discounts, prompt payment discounts, liquidating damages, and

performance bonuses.

Effect if Actual Results Differ From Assumptions Should market conditions and customer demands dictate changes to our standard shipping terms, the Company may be impacted by longer than typical revenue recognition cycles. The development of

43

expected contract costs and contract profit margin percentages involves procedures and personnel in all areas that provide financial or production information on the status of contracts. Due to the significance of judgment in the estimation process, it is likely that materially different revenue amounts could be recorded if we used different assumptions or if the underlying circumstances were to change. Changes in underlying assumptions/estimates, supplier performance, or circumstances may adversely or positively affect financial performance in future periods. If the combined profit margin for all contracts recognized on the percentage of completion method during 2018 had been estimated to be higher or lower by 1%, it would have increased or decreased revenue and gross profit for the year by approximately \$30.0 million. A few of our contracts are expected to be completed in a loss position. Provisions are made currently for estimated losses on uncompleted contracts.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

In the ordinary course of business, Wabtec is exposed to risks that increases in interest rates may adversely affect funding costs associated with its variable-rate debt. The Company's variable rate debt represents 22% and 38% of total long-term debt at December 31, 2018 and 2017, respectively.

To reduce the impact of interest rate changes on a portion of this variable-rate debt, the Company entered into interest rate swap agreements which effectively converted a portion of the debt from a variable to a fixed-rate borrowing during the term of the swap contracts. Refer to "Financial Derivatives and Hedging Activities" in Note 2 of "Notes to Consolidated Financial Statements" included in Part IV, Item 15 of this report for additional information regarding interest rate risk.

Foreign Currency Exchange Rate Risk

The Company is subject to certain risks associated with changes in foreign currency exchange rates to the extent our operations are conducted in currencies other than the U.S. dollar. For the year ended December 31, 2018, approximately 33% of Wabtec's net sales were in the United States, 9% in the United Kingdom, 7% in Germany, 6% in Canada, 6% in France, 5% in Mexico, 4% in China, 4% in Australia, 4% in India, 4% in Italy, 2% in Brazil, and 16% in other international locations. (See Note 22 of "Notes in Consolidated Financial Statements" included in Part IV, Item 15 of this report). To reduce the impact of changes in currency exchange rates, the Company has periodically entered into foreign currency forward contracts. Refer to "Financial Derivatives and Hedging Activities" in Note 2 of "Notes to Consolidated Financial Statements" included in Part IV, Item 15 of this report for more information regarding foreign currency exchange risk.

Our market risk exposure is not substantially different from our exposure at December 31, 2018.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Financial statements and supplementary data are set forth in Item 15 of Part IV hereof.

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

There have been no disagreements with our independent registered public accountants.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Wabtec's principal executive officer and its principal financial officer have evaluated the effectiveness of Wabtec's "disclosure controls and procedures," (as defined in Exchange Act Rule 13a-15(e)) as of December 31, 2018. Based upon their evaluation, the principal executive officer and principal financial officer concluded that Wabtec's disclosure controls and procedures are effective to provide reasonable assurance that information required to be disclosed by Wabtec in the reports filed or submitted by it under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and to provide reasonable assurance that information required to be disclosed by Wabtec in such reports is accumulated and communicated to Wabtec's Management, including its principal executive officer and principal finance officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

There was no change in Wabtec's "internal control over financial reporting" (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2018, that has materially affected, or is reasonably likely to materially affect, Wabtec's internal control over financial reporting. Management's annual report on internal control over financial reporting and the attestation report of the registered public accounting firm are included in Part IV, Item 15 of this report.

Management's Report on Internal Control over Financial Reporting

Management's Report on Internal Control Over Financial Reporting appears on page 52 and is incorporated herein by reference.

Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting

Ernst & Young LLP's attestation report on internal control over financial reporting appears on page 55 and is incorporated herein by reference.

Item 9B. OTHER INFORMATION

None.

PART III

Items 10 through 14.

In accordance with the provisions of General Instruction G(3) to Form 10-K, the information required by Item 10 (Directors, Executive Officers and Corporate Governance), Item 11 (Executive Compensation), Item 12 (Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters), Item 13 (Certain Relationships and Related Transactions, and Director Independence) and Item 14 (Principal Accounting Fees and Services) is incorporated herein by reference from the Company's definitive Proxy Statement for its Annual Meeting of Stockholders to be held on May 17, 2019, except for the Equity Compensation Plan Information required by Item 12, which is set forth in the table below. The definitive Proxy Statement will be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2018. Information relating to the executive officers of the Company is set forth in Part I.

Wabtec has adopted a Code of Ethics for Senior Officers which is applicable to our executive officers. As described in Item 1 of this report the Code of Ethics for Senior Officers is posted on our website at www.wabtec.com. In the event that we make any amendments to or waivers from this code, we will disclose the amendment or waiver and the reasons for such on our website.

This table provides aggregate information as of December 31, 2018 concerning equity awards under Wabtec's compensation plans and arrangements.

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by shareholders	466,677	\$ 61.04	2,800,836
Equity compensation plans not approved by shareholders	—	—	—
Total	466,677	\$ 61.04	2,800,836

PART IV

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

The financial statements, financial statement schedules and exhibits listed below are filed as part of this annual report:

	Page
(1) Financial Statements and Reports on Internal Control	
<u>Management's Reports to Westinghouse Air Brake Technologies Corporation Shareholders</u>	<u>52</u>
<u>Report of Independent Registered Public Accounting Firm</u>	<u>53</u>
<u>Report of Independent Registered Public Accounting Firm</u>	<u>54</u>
<u>Report of Independent Registered Public Accounting Firm on Internal Control Over Financial Reporting</u>	<u>55</u>
<u>Consolidated Balance Sheets as of December 31, 2018 and 2017</u>	<u>56</u>
<u>Consolidated Statements of Income for the three years ended December 31, 2018, 2017 and 2016</u>	<u>57</u>
<u>Consolidated Statements of Comprehensive Income for the three years ended December 31, 2018, 2017 and 2016</u>	<u>58</u>
<u>Consolidated Statements of Cash Flows for the three years ended December 31, 2018, 2017 and 2016</u>	<u>59</u>
<u>Consolidated Statements of Shareholders' Equity for the three years ended December 31, 2018, 2017 and 2016</u>	<u>60</u>
<u>Notes to Consolidated Financial Statements</u>	<u>61</u>
(2) Financial Statement Schedules	
<u>Schedule II—Valuation and Qualifying Accounts</u>	<u>101</u>
	Filing Method
Exhibits	
2.1 <u>Share Purchase Agreement among Financiere Faiveley S.A., Famille Faiveley Participations Francois Faiveley, Erwan Faiveley, FW Acquisition, LLC and Wabtec Corporation dated as of October 6, 2015</u>	16
2.2 <u>Tender Offer Agreement among Faiveley Transport S.A., FW Acquisition, LLC, and Wabtec Corporation dated as of October 6, 2015</u>	16
2.3 <u>Shareholder's Agreement among Financiere Faiveley S.A., FW Acquisition, LLC, and Wabtec Corporation dated as of October 6, 2015</u>	16
2.4 <u>Amendment No. 1 to Share Purchase Agreement among Mr. Erwan Faiveley, Wabtec France, and Wabtec Corporation dated as of October 24, 2016</u>	17
2.5 <u>Amendment No. 1 to Tender Offer Agreement among Faiveley Transport, S.A., Wabtec France, and Wabtec Corporation dated as of October 24, 2016</u>	17
2.6 <u>Amendment No. 1 to Shareholder's Agreement among Financiere Faiveley S.A., Famille Faiveley Participations, Francois Faiveley, Erwan Faiveley, and Wabtec Corporation dated as of dated as of October 24, 2016</u>	17
2.7** <u>Agreement and Plan of Merger, date May 20, 2018, among Westinghouse Air Brake Technologies Corporation, General Electric Company, Transportation Systems Holdings Inc. and Wabtec US Rail Holdings, Inc.</u>	24
2.8** <u>Separation, Distribution and Sale Agreement, date May 20, 2018, among Westinghouse Air Brake Technologies Corporation, General Electric Company, Transportation Systems Holdings Inc., and Wabtec US Rail, Inc.</u>	24
2.9 <u>Voting and Support Agreement, dated May 20, 2018, among General Electric Company and each of the persons listed on Schedule 1 thereto.</u>	24
2.10 <u>Form of Shareholders Agreement between General Electric Company and Westinghouse Air Brake Technologies Corporation</u>	24

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2.11	<u>Form of Tax Matters Agreement among General Electric Company, Transportation Systems Holdings Inc., Westinghouse Air Brake Technologies Corporation and Wabtec US Rail, Inc.</u>	24
2.12	<u>Form of Employee Matters Agreement among General Electric Company, Transportation Systems Holdings Inc., Westinghouse Air Brake Technologies Corporation and Wabtec US Rail, Inc.</u>	24
2.13**	<u>Amendment to the Agreement and Plan of Merger, dated January 25, 2019, by and among Westinghouse Air Brake Technologies Corporation, General Electric Company, Transportation Systems Holdings Inc., and Wabtec US Rail Holdings, Inc.</u>	27
2.14**	<u>Amendment to the Separation, Distribution and Sale Agreement, dated January 25, 2019, by and between Westinghouse Air Brake Technologies Corporation and General Electric Company.</u>	27
2.15	<u>Form of Shareholders Agreement between General Electric Company and Westinghouse Air Brake Technologies Corporation.</u>	27
2.16**	<u>Form of Tax Matters Agreement among General Electric Company, Transportation Systems Holdings Inc., Westinghouse Air Brake Technologies Corporation and Wabtec US Rail, Inc.</u>	27
3.1	<u>Restated Certificate of Incorporation of the Company dated January 30, 1995, as amended December 31, 2003</u>	9
3.2	<u>Certificate of Amendment of Restated Certificate of Incorporation dated May 14, 2013</u>	11
3.3	<u>Amended By-Laws of the Company, effective May 14, 2014</u>	8
3.4	<u>Certificate of Amendment to Restated Certificate of Incorporation dated November 19, 2018</u>	1
3.5	<u>Certificate of Designations of Series A Non-Voting Convertible Preferred Stock of Westinghouse Air Brake Technologies Corporation, dated February 22, 2019</u>	28
4.1	<u>Indenture, dated August 8, 2013 by and between the Company and Wells Fargo, National Association, as Trustee</u>	12
4.2	<u>First Supplemental Indenture, dated August 8, 2013, by and between the Company and Wells Fargo Bank, National Association, as Trustee</u>	12
4.3	<u>Form of 4.375% Senior Note due 2023 (included in Exhibit 4.2)</u>	12
4.4	<u>Second Supplemental Indenture, dated November 3, 2016, by and among Westinghouse Air Brake Technologies Corporation, the subsidiary guarantors named therein and Wells Fargo Bank, National Association, as Trustee</u>	19
4.5	<u>Third Supplemental Indenture, dated November 3, 2016, by and among Westinghouse Air Brake Technologies Corporation, the subsidiary guarantors named therein and Wells Fargo Bank, National Association, as Trustee</u>	19
4.6	<u>Form of 3.450% Senior Note due 2026 (included in Exhibit 4.5)</u>	19
4.7	<u>Fourth Supplemental Indenture, dated February 9, 2017, by and among Westinghouse Air Brake Technologies Corporation, the subsidiary guarantors named therein and Wells Fargo Bank, National Association, as Trustee</u>	20
4.8	<u>Fifth Supplemental Indenture, dated April 28, 2017, by and among Westinghouse Air Brake Technologies Corporation, the subsidiary guarantors named therein and Wells Fargo Bank, National Association, as Trustee</u>	21
4.9	<u>Sixth Supplemental Indenture, dated June 21, 2017, by and among Westinghouse Air Brake Technologies Corporation, the subsidiary guarantors named therein and Wells Fargo Bank, National Association, as Trustee.</u>	22
4.10	<u>Seventh Supplemental Indenture, dated June 8, 2018, by and among Westinghouse Air Brake Technologies Corporation, the subsidiary guarantors named therein and Wells Fargo Bank, National Association, as Trustee</u>	25
4.11	<u>Eighth Supplemental Indenture, dated June 29, 2018, by and among Westinghouse Air Brake Technologies Corporation, the subsidiary guarantors named therein and Wells Fargo Bank, National Association, as Trustee</u>	25
4.12	<u>Ninth Supplemental Indenture, dated September 14, 2018, by and among the Company, the guarantors party thereto and Wells Fargo Bank, National Association, as Trustee.</u>	26
10.1		2
		81

	Agreement of Sale and Purchase of the North American Operations of the Railway Products Group, an operating division of American Standard Inc. (now known as Trane), dated as of 1990 between Rail Acquisition Corp. and American Standard Inc. (only provisions on indemnification are reproduced)	
10.2	Letter Agreement (undated) between the Company and American Standard Inc. (now known as Trane) on environmental costs and sharing	2
10.3	Purchase Agreement dated as of June 17, 1992 among the Company, Schuller International, Inc., Manville Corporation and European Overseas Corporation (only provisions on indemnification are reproduced)	2

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10.4	<u>Westinghouse Air Brake Company 1995 Non-Employee Directors' Fee and Stock Option Plan, as amended and restated*</u>	4
10.5	<u>Westinghouse Air Brake Technologies Corporation 2000 Stock Incentive Plan, as amended *</u>	4
10.6	<u>Employment Agreement with Albert J. Neupaver, dated February 1, 2006 *</u>	3
10.7	<u>Form of Restricted Stock Agreement *</u>	10
10.8	<u>Westinghouse Air Brake Technologies Corporation 2011 Stock Incentive Plan as amended and restated*</u>	5
10.9	<u>Stock Purchase Agreement, by and among the Company, Standard Car Truck Company and Robclif, Inc., dated September 12, 2008</u>	6
10.10	<u>Second Amended and Restated Refinancing Credit Agreement, dated as of June 22, 2016, by and among the Company, Wabtec Cooperatief UA, as borrowers, certain subsidiaries of the Company as guarantors and the lenders party thereto and PNC Bank, National Association, as Administrative Agent, PNC Capital Markets LLC, Merrill Lynch, Pierce, Fenner & Smith Inc., JPMorgan Chase Bank, N.A., HSBC Bank, USA, National Association and Société Générale, as Joint Lead Arrangers and Joint Bookrunners, Bank of America, National Association and JPMorgan Chase Bank, N.A., as Co-Syndication Agents, and HSBC Bank USA, National Association and Société Générale, as Co-Documentation Agents.</u>	14
10.11	<u>First Amendment to Second Amended and Restated Refinancing Credit Agreement, dated as of April 19, 2017, by and among the Company, Wabtec Cooperatief UA, as a borrower, certain subsidiaries of the Company as guarantors, the lenders party thereto and PNC Bank, National Association, as Administrative Agent.</u>	21
10.12	<u>Second Amendment to Second Amended and Restated Refinancing Credit Agreement, dated as of October 11, 2017, by and among the Company, Wabtec Cooperatief UA, as a borrower, certain subsidiaries of the Company as guarantors, the lenders party thereto and PNC Bank, National Association, as Administrative Agent.</u>	23
10.12	<u>Form of Employment Continuation Agreement entered into by the Company with Albert J. Neupaver, Raymond T. Betler, David L. DeNinno, Patrick D. Dugan, Scott E. Wahlstrom, Michael E. Fetsko, Timothy R. Wesley and John A Mastalerz Jr.*</u>	7
10.13	<u>Amended and Restated Employment Agreement with Stephane Rambaud-Measson dated October 24, 2016*</u>	20
10.14	<u>Amended and Restated Employment Agreement with Guillaume Bouhours dated October 24, 2016*</u>	20
10.15	<u>Wabtec Corporation Deferred Compensation Plan for Executive Officers and Directors as adopted December 10, 2009 *</u>	10
10.16	<u>Form of Agreement for Nonstatutory Stock Option under the 1995 Non-Employee Directors' Fee and Stock Option Plan, as amended and restated*</u>	10
10.17	<u>Form of Agreement for Nonstatutory Stock Options under 2000 Stock Incentive Plan, as amended *</u>	10
10.18	<u>Form of Agreement for Nonstatutory Stock Options under 2011 Stock Incentive Plan as amended and restated*</u>	10
10.19	<u>Credit Agreement, dated as of June 8, 2018, by and among Westinghouse Air Brake Technologies Corporation, Wabtec Netherlands B.V. and the other borrowing subsidiaries party thereto, the lenders party thereto and PNC Bank, National Association, as Administrative Agent, Goldman Sachs Bank USA, HSBC Bank USA, N.A., JPMorgan Chase Bank, N.A., Merrill Lynch, Pierce, Fenner & Smith Incorporated, PNC Capital Markets LLC and TD Securities (USA) LLC, as Joint Lead Arrangers and Joint Bookrunners, Goldman Sachs Bank USA and PLC Capital Markets LLC, as Syndication Agents, and Bank of America, N.A., HSBC Bank USA, N.A., JPMorgan Chase Bank, N.A., and TD Securities</u>	25
10.20	<u>First Amendment to Credit Agreement, dated as of February 22, 2019, among Westinghouse Air Brake Technologies Corporation, Wabtec Netherlands B.V. and the other borrowing subsidiaries party thereto, the lenders party thereto and PNC Bank, National Association, as Administrative Agent</u>	1
21.0	<u>List of subsidiaries of the Company</u>	1
23.1	<u>Consent of Ernst & Young LLP</u>	1
23.2	<u>Consent of Independent Accountants</u>	1
31.1	<u>Rule 13a-14(a)/15d-14(a) Certifications</u>	1

31.2	<u>Rule 13a-14(a)/15d-14(a) Certifications</u>	1
32.1	<u>Section 1350 Certifications</u>	1
101.INS	XBRL Instance Document.	1
101.SCH	XBRL Taxonomy Extension Calculation Linkbase Document	1
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	1
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.	1

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101.LABXBRL Taxonomy Extension Label Linkbase Document	1
101.PRE XBRL Taxonomy Extension Presentation Linkbase Document	1

- 1 Filed herewith.
- 2 Filed as an exhibit to the Company's Registration Statement on Form S-1 (File No. 33-90866).
- 3 Filed as an exhibit to the Company's Quarterly Report on Form 10-Q (File No. 033-90866) for the period ended March 31, 2006.
- 4 Filed as an Annex to the Company's Schedule 14A Proxy Statement (File No. 1-13782) filed on April 13, 2006.
- 5 Filed as an Annex to the Company's Schedule 14A Proxy Statement (File No. 1-13782) filed on March 31, 2011.
- 6 Filed as an exhibit to the Company's Quarterly Report on Form 10-Q (File No. 1-13782) for the period ended September 30, 2008.
- 7 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782) dated July 2, 2009.
- 8 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated May 19, 2014.
- 9 Filed as an exhibit to the Company's Annual Report on Form 10-K (File No. 1-13782), dated February 25, 2011.
- 10 Filed as an exhibit to the Company's Annual Report on Form 10-K (File No. 1-13782), dated February 22, 2013.
- 11 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated May 15, 2013.
- 12 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated August 8, 2013.
- 13 Filed as an exhibit to the Company's Annual Report on Form 10-K (File No. 1-13782), dated February 21, 2014.
- 14 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated June 24, 2016.
- 15 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated July 30, 2015.
- 16 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated October 6, 2015.
- 17 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated October 26, 2016.
- 18 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated November 1, 2016.
- 19 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 1-13782), dated November 3, 2016.
- 20 Filed as an exhibit to the Company's Annual Report on Form 10-K (File No. 1-13782), dated February 28, 2017.
- 21 Filed as an exhibit to the Company's Quarterly Report on Form 10-Q (File No. 1-13782) for the period ended March 31, 2017.
- 22 Filed as an exhibit to the Company's Registration Statement on Form S-4 (File No. 333-219354).

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²³ Filed as an exhibit to the Company's Quarterly Report on Form 10-Q (File No. 1-13782) for the period ended September 30, 2017.

²⁴ Filed as an exhibit to the Company's Current Report on Form 8-K (File No 1-13782), dated May 24, 2018.

²⁵ Filed as an exhibit to the Company's Quarterly Report on Form 10-Q (File No. 1-13782), dated July 31, 2018.

²⁶ Filed as an exhibit to the Company's Current Report on Form 8-K (File No 1-13782), dated September 14, 2018.

27 Filed as an exhibit to the Company's Current Report on Form 8-K (File No 1-13782), dated January 31, 2019.

28 Filed as an exhibit to the Company's Current Report on Form 8-K (File No 1-13782), dated February 25, 2019.

* Management contract or compensatory plan.

** Certain schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Wabtec hereby undertakes to furnish supplementally, copies of any of the omitted schedules upon request by the SEC.

MANAGEMENT'S REPORTS TO WABTEC SHAREHOLDERS

Management's Report on Financial Statements and Practices

The accompanying consolidated financial statements of Westinghouse Air Brake Technologies Corporation and subsidiaries (the "Company") were prepared by Management, which is responsible for their integrity and objectivity. The statements were prepared in accordance with U.S. generally accepted accounting principles and include amounts that are based on Management's best judgments and estimates. The other financial information included in the 10-K is consistent with that in the financial statements.

Management also recognizes its responsibility for conducting the Company's affairs according to the highest standards of personal and corporate conduct. This responsibility is characterized and reflected in key policy statements issued from time to time regarding, among other things, conduct of its business activities within the laws of host countries in which the Company operates and potentially conflicting outside business interests of its employees. The Company maintains a systematic program to assess compliance with these policies.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. In order to evaluate the effectiveness of internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act, Management has conducted an assessment, including testing, using the criteria in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (COSO). The Company's system of internal control over financial reporting is 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 standards. 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.

Management has excluded Annax GmbH ("Annax") from its assessment of internal controls over financial reporting as of December 31, 2018 because the Company acquired Annax effective March 22, 2018. Annax is a subsidiary whose total assets, net assets, customer revenues and net income represents 1.0%, 1.6%, 1.1% and 1.0%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

Based on its assessment, Management has concluded that the Company maintained effective internal control over financial reporting as of December 31, 2018, based on criteria in Internal Control-Integrated Framework issued by the COSO. The effectiveness of the Company's internal control over financial reporting as of December 31, 2018, has been audited by Ernst & Young LLP, independent registered public accounting firm, as stated in their report which is included herein.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Westinghouse Air Brake Technologies Corporation
Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Westinghouse Air Brake Technologies Corporation (the Company) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and financial statement schedule listed in the Index at Item 15.(2) (collectively referred to as the "consolidated financial statements"). In our opinion, based on our audits and the report of other auditors, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We did not audit the pre-acquisition historical basis consolidated financial statements of Faiveley Transport S.A., a consolidated subsidiary, which statements reflect total revenues constituting 3.8% in 2016 of the related consolidated total. Those statements were audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to the amounts included for Faiveley Transport S.A., is based solely on the report of the other auditors. We audited the adjustments necessary to convert the pre-acquisition historical amounts included for Faiveley Transport S.A. to the basis reflected in the Company's 2016 consolidated financial statements.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 27, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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 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 financial statements. We believe that our audits and the report of other auditors provide a reasonable basis for our opinion.

/s/ ERNST & YOUNG LLP

We have served as the Company's auditor since 2002.

Pittsburgh, Pennsylvania

February 27, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Management Board of Faiveley Transport

In our opinion, the consolidated statement of income, comprehensive income, shareholders' equity and cash flows present fairly, in all material respects, the results of operations and cash flows of Faiveley Transport and its subsidiaries for the period from November 30, 2016 to December 31, 2016 (not presented separately herein), in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit of these financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion. As discussed in Note 3, the company has not applied push down accounting for its acquisition by Wabtec.

PricewaterhouseCoopers Audit

/s/ Philippe Vincent
Partner

Neuilly-sur-Seine, France
February 23, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Westinghouse Air Brake Technologies Corporation
Opinion on Internal Control over Financial Reporting

We have audited Westinghouse Air Brake Technologies Corporation's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Westinghouse Air Brake Technologies Corporation (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

As indicated in the accompanying Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Annax GmbH ("Annax") which is included in the 2018 consolidated financial statements of the Company and constituted 1.0% and 1.6% of total and net assets, respectively, as of December 31, 2018 and 1.1% and 1.0% of revenues and net income, respectively, for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of Annax. We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and financial statement schedule listed in the Index at Item 15.(2) and our report dated February 27, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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.

/s/ Ernst & Young LLP
Pittsburgh, Pennsylvania
February 27, 2019

55

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
CONSOLIDATED BALANCE SHEETS

In thousands, except shares and par value	December 31,	
	2018	2017
Assets		
Current Assets		
Cash and cash equivalents	\$ 580,908	\$ 233,401
Restricted cash	1,761,446	—
Accounts receivable	801,193	800,619
Unbilled accounts receivable	345,585	366,168
Inventories	844,886	742,634
Other assets	115,649	122,291
Total current assets	4,449,667	2,265,113
Property, plant and equipment	1,036,550	1,026,046
Accumulated depreciation	(472,813)	(452,074)
Property, plant and equipment, net	563,737	573,972
Other Assets		
Goodwill	2,396,544	2,460,103
Other intangibles, net	1,129,880	1,204,432
Other noncurrent assets	109,406	76,360
Total other assets	3,635,830	3,740,895
Total Assets	\$ 8,649,234	\$ 6,579,980
Liabilities and Shareholders' Equity		
Current Liabilities		
Accounts payable	\$ 589,449	\$ 552,525
Customer deposits	373,538	369,716
Accrued compensation	173,183	164,210
Accrued warranty	135,636	137,542
Current portion of long-term debt	64,099	47,225
Other accrued liabilities	310,785	302,112
Total current liabilities	1,646,690	1,573,330
Long-term debt	3,792,774	1,823,303
Accrued postretirement and pension benefits	95,446	103,734
Deferred income taxes	198,269	175,902
Accrued warranty	18,066	15,521
Other long-term liabilities	28,914	59,658
Total liabilities	5,780,159	3,751,448
Commitment and Contingencies (Note 21)		
Equity		
Preferred stock, 1,000,000 shares authorized, no shares issued	—	—
Common stock, \$.01 par value; 500,000,000 and 200,000,000 shares authorized: 132,349,534 shares issued and 96,614,946 and 96,034,352 outstanding at December 31, 2018 and December 31, 2017, respectively	1,323	1,323
Additional paid-in capital	914,568	906,616
Treasury stock, at cost, 35,734,588 and 36,315,182 shares, at December 31, 2018 and December 31, 2017, respectively	(816,145)	(827,379)
Retained earnings	3,021,968	2,773,300
Accumulated other comprehensive loss	(256,583)	(44,992)
Total Westinghouse Air Brake Technologies Corporation shareholders' equity	2,865,131	2,808,868
Noncontrolling interest	3,944	19,664

Total equity	2,869,075	2,828,532
Total Liabilities and Equity	\$8,649,234	\$6,579,980

The accompanying notes are an integral part of these statements.

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
CONSOLIDATED STATEMENTS OF INCOME

	Year Ended December 31,		
	2018	2017	2016
In thousands, except per share data			
Net sales	\$4,363,547	\$3,881,756	\$2,931,188
Cost of sales	(3,129,662)	(2,816,443)	(2,006,949)
Gross profit	1,233,885	1,065,313	924,239
Selling, general and administrative expenses	(633,244)	(512,552)	(373,559)
Engineering expenses	(87,450)	(95,166)	(71,375)
Amortization expense	(39,754)	(36,516)	(22,698)
Total operating expenses	(760,448)	(644,234)	(467,632)
Income from operations	473,437	421,079	456,607
Other income and expenses			
Interest expense, net	(112,235)	(77,884)	(50,298)
Other income, net	6,380	8,868	6,528
Income from operations before income taxes	367,582	352,063	412,837
Income tax expense	(75,879)	(89,773)	(99,433)
Net income	291,703	262,290	313,404
Less: Net loss (income) attributable to noncontrolling interest	3,241	(29)	(8,517)
Net income attributable to Wabtec shareholders	\$294,944	\$262,261	\$304,887
Earnings Per Common Share			
Basic			
Net income attributable to Wabtec shareholders	\$3.06	\$2.74	\$3.37
Diluted			
Net income attributable to Wabtec shareholders	\$3.05	\$2.72	\$3.34
Weighted average shares outstanding			
Basic	95,994	95,453	90,359
Diluted	96,464	96,125	91,141

The accompanying notes are an integral part of these statements.

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2018	2017	2016
In thousands, except per share data			
Net income attributable to Wabtec shareholders	\$294,944	\$262,261	\$304,887
Foreign currency translation gain (loss)	(207,267)	326,096	(93,684)
Unrealized gain (loss) on derivative contracts	(5,307)	9,799	305
Unrealized gain (loss) on pension benefit plans and post-retirement benefit plans	(3,774)	2,845	(12,021)
Other comprehensive gain (loss) before tax	(216,348)	338,740	(105,400)
Income tax (expense) benefit related to components of other comprehensive loss	4,757	(4,127)	2,514
Other comprehensive income (loss), net of tax	(211,591)	334,613	(102,886)
Comprehensive income attributable to Wabtec shareholders	\$83,353	\$596,874	\$202,001

The accompanying notes are an integral part of these statements.

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

	December 31,		
	2018	2017	2016
In thousands, except per share data			
Operating Activities			
Net income	\$291,703	\$262,290	\$313,404
Adjustments to reconcile net income to cash provided by operations:			
Depreciation and amortization	109,297	103,248	69,795
Stock-based compensation expense	25,315	21,287	20,813
Deferred income taxes	(5,299)	(67,423)	(10,228)
Loss on disposal of property, plant and equipment	898	1,907	232
Changes in operating assets and liabilities, net of acquisitions			
Accounts receivable and unbilled accounts receivable	(54,611)	(68,676)	19,728
Inventories	(108,883)	(8,955)	45,340
Accounts payable	48,763	(91,722)	(18,932)
Accrued income taxes	7,880	47,644	(11,759)
Accrued liabilities and customer deposits	31,744	(18,891)	(11,338)
Other assets and liabilities	(32,136)	8,102	33,475
Net cash provided by operating activities	314,671	188,811	450,530
Investing Activities			
Purchase of property, plant and equipment	(93,305)	(89,466)	(50,216)
Proceeds from disposal of property, plant and equipment	11,293	1,291	363
Acquisitions of business, net of cash acquired	(51,153)	(945,299)	(183,113)
Other	(14,122)	—	—
Net cash used for investing activities	(147,287)	(1,033,474)	(232,966)
Financing Activities			
Proceeds from debt, net of issuance costs	3,480,702	1,216,740	1,875,000
Payments of debt	(1,453,954)	(1,269,537)	(1,102,748)
Stock re-purchase	—	—	(212,176)
Proceeds from exercise of stock options and other benefit plans	9,962	4,428	1,983
Payment of income tax withholding on share-based compensation	(12,322)	(6,844)	(6,658)
Cash dividends (\$0.48, \$0.44 and \$0.36 per share for the years ended December 31, 2018, 2017 and 2016)	(46,277)	(42,218)	(32,430)
Net cash provided by (used for) financing activities	1,978,111	(97,431)	522,971
Effect of changes in currency exchange rates	(36,542)	32,263	(26,436)
Increase (decrease) in cash	2,108,953	(909,831)	714,099
Cash, cash equivalents and restricted cash, beginning of year	233,401	1,143,232	429,133
Cash, cash equivalents and restricted cash, end of year	\$2,342,354	\$233,401	\$1,143,232

The accompanying notes are an integral part of these statements.

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

	Common Stock	Common Stock	Additional Paid-in Capital	Treasury Stock	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Non-controlling Interest	Total
In thousands, except share and per share data	Shares	Amount	Capital	Shares	Amount	Earnings	Loss	Interest	Total
Balance, December 31, 2015	132,349,534	\$ 1,323	\$ 469,326	(40,513,428)	\$(775,124)	\$ 2,280,801	\$(276,719)	\$ 1,732	\$ 1,701,339
Cash dividends (\$0.36 dividend per share)	—	—	—	—	—	(32,430)	—	—	(32,430)
Proceeds from treasury stock issued from the exercise of stock options and other benefit plans, net of tax	—	—	(8,490)	328,245	5,038	—	—	—	(3,452)
Stock based compensation	—	—	17,748	—	—	—	—	—	17,748
Non-controlling interests associated with Faiveley Transport Acquisition	—	—	—	—	—	—	—	760,599	760,599
Net income	—	—	—	—	—	304,887	—	8,517	313,404
Other comprehensive loss, net of tax	—	—	—	—	—	—	(102,886)	—	(102,886)
Stock issued for Faiveley Transport Acquisition	—	—	391,367	6,307,489	143,312	—	—	—	534,679
Stock re-purchase	—	—	—	(3,046,408)	(212,176)	—	—	—	(212,176)
Balance, December 31, 2016	132,349,534	1,323	869,951	(36,924,102)	(838,950)	2,553,258	(379,605)	770,848	2,976,825
Cash dividends (\$0.44 dividend per share)	—	—	—	—	—	(42,218)	—	—	(42,218)
Proceeds from treasury stock issued from the exercise of	—	—	(7,361)	608,920	4,945	—	—	—	(2,416)

stock options and other benefit plans, net of tax										
Stock based compensation	—	—	16,650	—	—	—	—	—	—	16,650
Acquisition of Faiveley Transport noncontrolling interest	—	—	8,931	—	—	—	—	(751,213)	(742,282))
Net income	—	—	—	—	—	262,261	—	29	262,290	
Other comprehensive income, net of tax	—	—	—	—	—	—	334,613	—	334,613	
Stock issued for Faiveley Transport Acquisition	—	—	18,445	—	6,626	—	—	—	25,071	
Balance, December 31, 2017	132,349,534	1,323	906,616	(36,315,182)	(827,379)	2,773,300	(44,992)	19,664	2,828,532	
Cash dividends (\$0.48 dividend per share)	—	—	—	—	—	(46,277)	—	—	(46,277))
Proceeds from treasury stock issued from the exercise of stock options and other benefit plans, net of tax	—	—	(13,594)	580,594	11,234	—	—	—	(2,360))
Stock based compensation	—	—	21,546	—	—	—	—	—	21,546	
Net income (loss)	—	—	—	—	—	294,944	—	(3,241)	291,703	
Other comprehensive loss, net of tax	—	—	—	—	—	—	(211,591)	—	(211,591))
Other owner changes	—	—	—	—	—	—	—	(12,479)	(12,479))
Balance, December 31, 2018	132,349,534	\$1,323	\$914,568	(35,734,588)	\$(816,145)	\$3,021,968	\$(256,583)	\$3,944	\$2,869,075	

The accompanying notes are an integral part of these statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. BUSINESS

Wabtec is one of the world's largest providers of value-added, technology-based equipment, systems and services for the global passenger transit and freight rail industries. Our highly engineered products, which are intended to enhance safety, improve productivity and reduce maintenance costs for customers, can be found on most locomotives, freight cars, passenger transit cars and buses around the world. Our products enhance safety, improve productivity and reduce maintenance costs for customers, and many of our core products and services are essential in the safe and efficient operation of freight rail and passenger transit vehicles. Wabtec is a global company with operations in 30 countries and our products can be found in more than 100 countries throughout the world. In 2018, about 67% of the Company's revenues came from customers outside the U.S.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation The consolidated financial statements include the accounts of the Company and all subsidiaries that it controls. For consolidated subsidiaries in which the Company's ownership is less than 100%, the outside shareholders' interests are shown as noncontrolling interests. These statements have been prepared in accordance with U.S. generally accepted accounting principles. Sales between subsidiaries are billed at prices consistent with sales to third parties and are eliminated in consolidation.

Cash Equivalents Cash equivalents are highly liquid investments purchased with an original maturity of three months or less.

Allowance for Doubtful Accounts The allowance for doubtful accounts receivable reflects our best estimate of probable losses inherent in our receivable portfolio determined on the basis of historical experience, specific allowances for known troubled accounts and other currently available evidence. The allowance for doubtful accounts was \$16.9 million and \$12.3 million as of December 31, 2018 and 2017, respectively.

Inventories Inventories are stated at the lower of cost or market. Cost is determined under the first-in, first-out (FIFO) method. Inventory costs include material, labor and overhead.

Property, Plant and Equipment Property, plant and equipment additions are stated at cost. Expenditures for renewals and improvements are capitalized. Expenditures for ordinary maintenance and repairs are expensed as incurred. The Company computes book depreciation principally on the straight-line method. Accelerated depreciation methods are utilized for income tax purposes.

Leasing Arrangements The Company conducts a portion of its operations from leased facilities and finances certain equipment purchases through lease agreements. In those cases in which the lease term approximates the useful life of the leased asset or the lease meets certain other prerequisites, the leasing arrangement is classified as a capital lease. The remaining arrangements are treated as operating leases.

Goodwill and Intangible Assets Goodwill and other intangible assets with indefinite lives are not amortized. Other intangibles (with definite lives) are amortized on a straight-line basis over their estimated economic lives. Amortizable intangible assets are reviewed for impairment when indicators of impairment are present. The Company tests goodwill and indefinite-lived intangible assets for impairment at the reporting unit level and at least annually. The Company performs its annual impairment test during the fourth quarter after the annual forecasting process is completed, and also tests for impairment whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Periodically, Management of the Company assesses whether or not an indicator of impairment is present that would necessitate an impairment analysis be performed.

For 2018, the Company opted to proceed directly to the quantitative impairment test for all reporting units with goodwill. In the first step of the quantitative assessment, our assets and liabilities, including existing goodwill and other intangible assets, are assigned to the identified reporting units to determine the carrying value of the reporting units. The income approach and the market approach are weighted at 50% and 50%, respectively, in arriving at fair value. The discounted cash flow model requires several assumptions including future sales growth, EBIT (earnings before interest and taxes) margins and capital expenditures for the reporting units. The discounted cash flow model also requires the use of a discount rate and a terminal revenue growth rate (the revenue growth rate for the period beyond the years forecasted by the reporting units), as well as projections of future operating margins. The market approach requires several assumptions including EBITDA (earnings before interest, taxes, depreciation and

amortization) multiples for comparable companies that operate in the same markets as the Company's reporting units. The estimated fair value of all reporting units was in excess of its respective carrying value, which resulted in a conclusion that no impairment existed.

Additionally, the Company proceeded directly to the quantitative impairment test for some trade names with indefinite lives. The fair value of all trade names subject to the quantitative impairment test exceeded its respective carrying value, resulting in a conclusion that no impairment existed. For trade names not subject to the quantitative testing, the Company opted to perform a qualitative trade name impairment assessment and determined from the qualitative assessment that it was not more likely than not that the estimated fair values of the trade names were less than their carrying values; therefore, no further analysis was required. In assessing the qualitative factors to determine whether it is more likely than not that the fair value of a trade name is less than its carrying amount, we assess relevant events and circumstances that may impact the fair value and the carrying amount of the trade name. The identification of relevant events and circumstances and how these may impact a trade name's fair value or carrying amount involve significant judgments and assumptions. The judgment and assumptions include the identification of macroeconomic conditions, industry and market considerations, cost factors, overall financial performance, Wabtec specific events, share price trends and making the assessment on whether each relevant factor will impact the impairment test positively or negatively and the magnitude of any such impact.

Warranty Costs Warranty costs are accrued based on Management's estimates of repair or upgrade costs per unit and historical experience. Warranty expense was \$58.0 million, \$50.4 million and \$28.9 million for 2018, 2017 and 2016, respectively. Accrued warranty was \$153.7 million and \$153.1 million at December 31, 2018 and 2017, respectively.

Income Taxes Income taxes are accounted for under the liability method. Deferred tax assets and liabilities are determined based on differences between financial reporting and tax basis of assets and liabilities and are measured using the enacted tax rates and laws. The provision for income taxes includes federal, state and foreign income taxes.

Stock-Based Compensation The Company recognizes compensation expense for stock-based compensation based on the grant date fair value amortized ratably over the requisite service period following the date of grant.

Financial Derivatives and Hedging Activities The Company uses forward contracts to mitigate its foreign currency exchange rate exposure. Foreign currency forward contracts are agreements with a counterparty to exchange two distinct currencies at a set exchange rate for delivery on a set date at some point in the future. There is no exchange of funds until the delivery date. At the delivery date, the Company can either take delivery of the currency or settle on a net basis. For further information regarding the foreign currency forward contracts, see Footnote 19.

The Company uses interest rate swaps to manage interest rate exposures, The Company entered into an interest rate swap agreement with a notional value of \$150 million. As of December 19, 2018, the interest swap agreement has expired. For further information regarding the interest rate swap agreement, see Footnote 19.

Foreign Currency Translation Assets and liabilities of foreign subsidiaries, except for the Company's Mexican operations whose functional currency is the U.S. Dollar, are translated at the rate of exchange in effect on the balance sheet date while income and expenses are translated at the average rates of exchange prevailing during the period.

Foreign currency gains and losses resulting from transactions, and the translation of financial statements are recorded in the Company's consolidated financial statements based upon the provisions of Accounting Standards Codification ("ASC") 830, "Foreign Currency Matters." The effects of currency exchange rate changes on intercompany transactions and balances of a long-term investment nature are accumulated and carried as a component of accumulated other comprehensive loss. The effects of currency exchange rate changes on intercompany transactions that are denominated in a currency other than an entity's functional currency are charged or credited to earnings. Foreign exchange transaction losses recognized in other income, net were \$5.7 million, \$6.6 million and \$4.0 million for 2018, 2017 and 2016, respectively.

Noncontrolling Interests In accordance with ASC 810, the Company has classified noncontrolling interests as equity on our condensed consolidated balance sheets as of December 31, 2018 and 2017. Net loss attributable to noncontrolling interests was \$3.2 million for the year ended December 31, 2018. Net income attributable to noncontrolling interest was \$8.5 million for the year ended December 31, 2016. Net income attributable to noncontrolling interests for the year ended December 31, 2017 was not material.

Revenue Recognition On January 1, 2018, the Company adopted ASC 606 "Revenue from Contracts with Customers". This new guidance provides a five-step analysis of transactions to determine when and how revenue is recognized and requires entities to recognize revenue at an amount that reflects the consideration to which the Company expects to be entitled in exchange for transferring goods or services to a customer.

Approximately 75% of the Company's revenues are derived from performance obligations that are satisfied at a point in time when control passes to the customer which is generally at the time of shipment in accordance with agreed upon delivery

terms. The remaining revenues are earned over time. This approach is consistent with our revenue recognition approach in prior years.

The Company also has long-term customer agreements involving the design and production of highly engineered products that require revenue to be recognized over time because these products have no alternative use without significant economic loss and the agreements contain an enforceable right to payment including a reasonable profit margin from the customer in the event of contract termination. Additionally, the Company has customer agreements involving the creation or enhancement of an asset that the customer controls which also require revenue to be recognized over time. This approach is consistent with our revenue recognition approach in prior years. Generally, the Company uses an input method for determining the amount of revenue, cost and gross margin to recognize over time for these customer agreements. The input methods used for these agreements include costs of material and labor, both of which give an accurate representation of the progress made toward complete satisfaction of a particular performance obligation. Contract revenues and cost estimates are reviewed and revised quarterly at a minimum and adjustments are reflected in the accounting period as such amounts are determined.

Contract assets include unbilled amounts resulting from sales under long-term contracts where revenue is recognized over time and revenue exceeds the amount that can be billed to the customer based on the terms of the contract.

Contract assets are classified as current assets under the caption "Unbilled Accounts Receivable" on the consolidated balance sheet. The Company has elected to use the practical expedient and not consider unbilled amounts anticipated to be paid within one year as significant financing components.

Contract liabilities include customer deposits that are made prior to the incurrence of costs related to a newly agreed upon contract and advanced customer payments that are in excess of revenue recognized. These contract liabilities are classified as current liabilities under the caption "Customer Deposits" on the consolidated balance sheet. These contract liabilities are not considered a significant financing component because they are used to meet working capital demands that can be higher in the early stages of a contract and revenue associated with the contract liabilities is expected to be recognized within one year. Contract liabilities also include provisions for estimated losses from uncompleted contracts. Provisions for loss contracts were \$71.2 million and \$94.0 million at December 31, 2018 and 2017, respectively. These provisions for estimated losses are classified as current liabilities and included within the caption "Other accrued liabilities" on the consolidated balance sheet.

Due to the nature of work required to be performed on the Company's long-term projects, the estimation of total revenue and cost at completion is subject to many variables and requires significant judgment. Contract estimates related to long-term projects are based on various assumptions to project the outcome of future events that could span several years. These assumptions include cost of materials; labor availability and productivity; complexity of the work to be performed; and the performance of suppliers, customers and subcontractors that may be associated with the contract. We have a disciplined quarterly estimate-at-completion process where management reviews the progress of long term-projects. As part of this process, management reviews information including key contract matters, progress towards completion, identified risks and opportunities and any other information that could impact the Company's estimates of revenue and costs. After completing this analysis, any quarterly adjustments to net sales, cost of goods sold, and the related impact to operating income are recognized as necessary in the period they become known.

Generally, the Company's revenue contains a single performance obligation for each distinct good. Pricing is defined in our contracts on a line item basis and includes an estimate of variable consideration when required by the terms of the individual customer contract. Types of variable consideration that the Company typically has include volume discounts, prompt payment discounts, liquidating damages, and performance bonuses. Sales returns and allowances are also estimated and recognized in the same period the related revenue is recognized, based upon the Company's experience.

Remaining performance obligations represent transaction price of firm customer orders subject to standard industry cancellation provisions and substantial scope-of-work adjustments. As of December 31, 2018, the Company's remaining performance obligations were \$4.5 billion. The Company expects to recognize revenue of approximately 55% of remaining performance obligations over the next 12 months, with the remainder recognized thereafter.

Letters of Credit In the ordinary course of its business, the Company issues letters of credit related to commercial products. The outstanding amount, including the letters of credit issues under the credit facility, were \$354.2 million and \$364.6 million at December 31, 2018 and 2017, respectively.

Pre-Production Costs Certain pre-production costs relating to long-term production and supply contracts have been deferred and will be recognized over the life of the contracts. Deferred pre-production costs were \$16.4 million and \$20.2 million at December 31, 2018 and 2017, respectively.

Significant Customers and Concentrations of Credit Risk The Company's trade receivables are from rail and transit industry original equipment manufacturers, Class I railroads, railroad carriers and commercial companies that utilize rail cars in their operations, such as utility and chemical companies. No one customer accounted for more than 10% of the Company's consolidated net sales in 2018, 2017 or 2016.

Shipping and Handling Fees and Costs All fees billed to the customer for shipping and handling are classified as a component of net revenues. All costs associated with shipping and handling are classified as a component of cost of sales.

Research and Development Research and development costs are charged to expense as incurred. For the years ended December 31, 2018, 2017 and 2016, the Company incurred costs of approximately \$87.5 million, \$95.2 million, and \$71.4 million, respectively.

Earnings Per Share Basic and diluted earnings per common share is computed in accordance with ASC 260 "Earnings Per Share." Unvested share-based payment awards that contain nonforfeitable rights to dividends or dividend equivalents (whether paid or unpaid) are participating securities and included in the computation of earnings per share pursuant to the two-class method included in ASC 260-10-55 (See Note 13 "Earnings Per Share" included herein).

Reclassifications Certain prior year amounts have been reclassified, where necessary, to conform to the current year presentation. Refer to Recently Adopted Accounting Pronouncements below.

Use of Estimates The preparation of financial statements in conformity with generally accepted accounting principles in the United States requires the Company to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period. Actual amounts could differ materially from the estimates. On an ongoing basis, Management reviews its estimates based on currently available information. Changes in facts and circumstances may result in revised estimates.

Recently Issued Accounting Pronouncements In February 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2018-02, "Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income". The amendments in this update address certain stranded income tax effects in accumulated other comprehensive income ("AOCI") resulting from the Tax Cuts and Jobs Act (the "Tax Act"). Current guidance requires the effect of a change in tax laws or rates on deferred tax balances to be reported in income from continuing operations in the accounting period that includes the period of enactment, even if the related income tax effects were originally charged or credited directly to AOCI. The amendments in this update allow a reclassification from accumulated other comprehensive income to retained earnings for stranded effects resulting from the Tax Act. The amount of the reclassification would include the effect of the change in the U.S. federal corporate income tax rate on the gross deferred tax amounts and related valuation allowances, if any, at the date of the enactment of the Tax Act related to items in AOCI. The updated guidance is effective for reporting periods beginning after December 15, 2018 and is to be applied retrospectively to each period in which the effect of the Tax Act related to items remaining in AOCI are recognized or at the beginning of the period of adoption. The Company has evaluated the potential impact of adopting this guidance and determined it will not have a material impact on its consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, "Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment". The amendments in this update eliminate the requirement to perform Step 2 of the goodwill impairment test. Instead, an entity should perform a goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value up to the carrying amount of the goodwill. This ASU is effective for public companies in the fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted. The impact of adopting this guidance could result in a change in the overall conclusion as to whether or not a reporting unit's goodwill is impaired and the amount of an impairment charge recognized in the event a reporting unit's carrying value exceeds its fair value. All of the Company's reporting units had fair values that were greater than the carrying value as of the Company's last quantitative goodwill impairment test, which was performed as of October 1, 2018. The Company is currently evaluating the potential impact of adopting this guidance on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 814)" which requires lessees to recognize a right of use asset and lease liability on the balance sheet for all leases with terms longer than 12 months. For leases with terms less than 12 months, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize a right of use asset and lease liability. The guidance requires enhanced disclosures regarding the amount, timing, and uncertainty of cash flows arising from leases that will be effective for interim and annual periods beginning after December 15, 2018, with early adoption permitted. This guidance becomes effective for the Company on January 1, 2019. The Company plans to elect

the practical expedient which does not require the capitalization of leases with terms of 12 months or less. And the Company does not plan to elect the practical expedient which allows hindsight to be used to determine the term of a lease. The Company has completed the accumulation of its lease portfolio into a lease management system and has validated the information for accuracy and completeness. The Company has implemented the system which will be used as the primary source for the Company's lease information and related accounting. Management expects to record a right-of-use asset and lease liability on the Consolidated Balance Sheet for several types of operating leases, including land and buildings, plant equipment, and vehicles. The amount of the respective asset and liability is estimated to be within a range of \$165 million to \$185 million. The FASB recently proposed a transition alternative, which would allow for the application of the guidance at beginning of the period in which it is adopted, rather than requiring the adjustment of prior comparative periods. The Company has adopted this transition alternative on the January 1, 2019 adoption date.

Recently Adopted Accounting Pronouncements In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers." This ASU supersedes most of the previous revenue recognition requirements in U.S. GAAP and requires entities to recognize revenue at an amount that reflects the consideration to which the Company expects to be entitled in exchange for transferring goods or services to a customer. The new standard also requires significantly expanded disclosures regarding the qualitative and quantitative information of an entity's nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. This ASU became effective for public companies during interim and annual reporting periods beginning after December 15, 2017. The Company adopted this accounting standard update using the modified retrospective method. The impact of adopting the new standard was not material to the consolidated statement of income or the consolidated balance sheet.

In March 2017, the FASB issued ASU No. 2017-07 "Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost". The amendments in this update require the service cost component of net benefit costs to be reported in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit costs are required to be presented in the income statement separately from the service cost component and outside income from operations. This update also allows the service cost component to be eligible for capitalization when applicable. In accordance with this update, the Company began recognizing the interest expense component of net periodic benefit cost in interest expense in the income statement and the expected return on plan assets, net amortization/deferrals, and curtailments in other income (expense), net in the income statement. This update has been adopted by the Company and applied retrospectively for presentation of the service cost component and other components of net benefit costs in accordance with the ASU. The impact of adoption resulted in increases of \$0.6 million, \$9.2 million and \$9.8 million to selling, general, and administrative expense, interest expense, net and other income, net, respectively, in the income statement for the year ended December 31, 2017. The impact of adoption resulted in increases of \$1.8 million, \$7.7 million and \$9.5 million to selling, general, and administrative expense, interest expense, net and other income, net, respectively, in the income statement for the year ended December 31, 2016. Also, the capitalization of the service cost component of net benefit cost will be adopted prospectively in accordance with the ASU.

In November 2016, the FASB issued ASU No. 2016-18 "Statement of Cash Flows (Topic 230): Restricted Cash". The amendments in this update require a statement of cash flows to explain the change during the period in total cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The requirements of this update have been adopted by the Company and applied retrospectively. As a result, restricted cash related to the acquisition of Faiveley Transport is included in the change in cash for the years ended December 31, 2017 and 2016.

3. ACQUISITIONS

Faiveley Transport

On November 30, 2016, the Company acquired majority ownership of Faiveley Transport under the terms of a Share Purchase Agreement. Faiveley Transport is a leading global provider of value-added, integrated systems and services for the railway industry with annual sales of about \$1.2 billion and more than 5,700 employees in 24 countries.

Faiveley Transport supplies railway manufacturers, operators and maintenance providers with a range of value-added, technology-based systems and services in Energy & Comfort (air conditioning, power collectors and converters, and passenger information), Access & Mobility (passenger access systems and platform doors), and Brakes and Safety (braking systems and couplers). The transaction was structured as a step acquisition as follows:

On November 30, 2016, the Company acquired majority ownership of Faiveley Transport, after completing the purchase of the Faiveley family's ownership interest under the terms of the Share Purchase Agreement, which directed the Company to pay €100 per share of Faiveley Transport, payable between 25% and 45% in cash at the election of those shareholders and the remainder payable in Wabtec stock. The Faiveley family's ownership interest acquired by the Company represented approximately 51% of outstanding share capital and approximately 49% of the outstanding voting shares of Faiveley Transport. Upon completion of the share purchase under the Share Purchase Agreement, Wabtec commenced a tender offer for the remaining publicly traded Faiveley Transport shares. The public shareholders had the option to elect to receive €100 per share in cash or 1.1538 shares of Wabtec common stock per share of Faiveley Transport. The common stock portion of the consideration was subject to a cap on issuance of Wabtec common shares that was equivalent to the rates of cash and stock elected by the 51% owners.

On February 3, 2017, the initial cash tender offer was closed, which resulted in the Company acquiring approximately 27% of additional outstanding share capital and voting rights of Faiveley Transport for approximately \$411.8 million in cash and \$25.2 million in Wabtec stock. After the initial cash tender offer, the Company owned approximately 78% of outstanding share capital and 76% of voting rights.

On March 6, 2017, the final cash tender offer was closed, which resulted in the Company acquiring approximately 21% of additional outstanding share capital and 22% of additional outstanding voting rights of Faiveley Transport for approximately \$303.2 million in cash and \$0.3 million in Wabtec stock. After the final cash tender offer, the Company owned approximately 99% of the share capital and 98% of the voting rights of Faiveley Transport.

On March 21, 2017, a mandatory squeeze-out procedure was finalized, which resulted in the Company acquiring the Faiveley Transport shares not tendered in the offers for approximately \$17.5 million in cash. This resulted in the Company owning 100% of the share capital and voting rights of Faiveley Transport.

As of November 30, 2016, the date the Company acquired 51% of the share capital and 49% of the voting interest in Faiveley Transport, Faiveley Transport was consolidated under the variable interest entity model as the Company concluded that it was the primary beneficiary of Faiveley Transport as it then possessed the power to direct the activities of Faiveley Transport that most significantly impact its economic performance and it then possessed the obligation and right to absorb losses and benefits from Faiveley Transport.

The purchase price paid for 100% ownership of Faiveley Transport was \$1,507 million. The \$744.7 million included as deposits in escrow on the consolidated balance sheet at December 31, 2016 was cash designated for use as consideration for the tender offers.

The fair values of the assets acquired and liabilities assumed were determined using the income, cost and market approaches. The fair value measurements were primarily based on significant inputs that are not observable in the market and are considered Level 3. The December 31, 2016 consolidated balance sheet includes the assets and liabilities of Faiveley Transport, which have been measured at fair value. The fair value of the noncontrolling interest was determined using the market price of Faiveley Transport's publicly traded common stock multiplied by the number of publicly traded common shares outstanding at the acquisition date and is considered Level 1. The acquisition of the noncontrolling interest during the three months ended March 31, 2017 resulted in a \$8.9 million increase to additional paid-in capital on the consolidated balance sheet which represents the difference in consideration paid to acquire the noncontrolling interest and the carrying value of noncontrolling interest at acquisition.

The following table summarizes the final fair values of the Faiveley Transport assets acquired and liabilities assumed.

In thousands

Assets acquired	
Cash and cash equivalents	\$ 178,318
Accounts receivable	439,631
Inventories	205,649
Other current assets	70,930
Property, plant, and equipment	148,746
Goodwill	1,262,350
Trade names	346,328
Customer Relationships	233,529
Patents	1,201
Other noncurrent assets	184,564
Total assets acquired	3,071,246
Liabilities assumed	
Current liabilities	819,493
Debt	409,899
Other noncurrent liabilities	335,039
Total liabilities assumed	1,564,431
Net assets acquired	\$ 1,506,815

Other Acquisitions

The Company made the following acquisitions operating as a business unit or component of a business unit in the Freight Segment:

On December 4, 2017, the Company acquired Melett Limited ("Melett"), a leader in the design, manufacture, and supply of high-quality turbochargers and replacement parts to the turbocharger aftermarket, for a purchase price of approximately \$71.9 million, net of cash acquired, resulting in goodwill of \$26.7 million, none of which will be deductible for tax purposes.

On April 5, 2017, the Company acquired Thermal Transfer Corporation ("TTC"), a leading provider of heat transfer solutions for industrial applications, for a purchase price of approximately \$32.5 million, net of cash acquired, resulting in goodwill of \$14.1 million, all of which will be deductible for tax purposes.

On March 13, 2017, the Company acquired Aero Transportation Products ("ATP"), a manufacturer of engineered covering systems for hopper freight cars, for a purchase price of approximately \$65.3 million, net of cash acquired, resulting in goodwill of \$29.0 million, all of which will be deductible for tax purposes.

The following table summarizes the final fair values of the assets acquired and liabilities assumed at the date of the acquisitions.

	Melett December 4, 2017	TTC April 5, 2017	ATP March 13, 2017
In thousands			
Current assets, net of cash acquired	\$ 34,491	\$ 3,744	\$ 11,666
Property, plant & equipment	5,917	5,413	5,354
Goodwill	26,653	14,095	29,034
Other intangible assets	28,590	12,300	25,000
Total assets acquired	95,651	35,552	71,054
Total liabilities assumed	(23,758)	(3,041)	(5,800)
Net assets acquired	\$ 71,893	\$ 32,511	\$ 65,254

The Company made the following acquisitions operating as a business unit or component of a business unit in the Transit Segment:

On March 22, 2018, the Company acquired Annax GmbH ("Annax"), a leading supplier of public address and passenger information systems for transit vehicles, for a purchase price of approximately \$28.7 million, net of cash acquired, resulting in preliminary goodwill of \$25.5 million, none of which will be deductible for tax purposes.

On October 2, 2017, the Company acquired AM General Contractor ("AM General"), a manufacturer of safety systems, mainly for transit rail cars for a purchase price of approximately \$10.4 million, net of cash acquired, resulting in goodwill of \$6.1 million, none of which will be deductible for tax purposes.

For the Annax acquisition, the following table summarizes the preliminary estimated fair value of the assets acquired and liabilities assumed at the date of acquisition. For the AM General acquisition, the following table summarizes the final fair value of the assets acquired and liabilities assumed at the date of the acquisition.

	Annax	AM General
	March 22, 2018	October 2, 2017
In thousands		
Current assets, net of cash acquired	\$34,036	\$6,805
Property, plant & equipment	674	4,140
Goodwill	25,471	6,114
Other intangible assets	12,828	19,427
Total assets acquired	73,009	36,486
Total liabilities assumed	(44,345)	(26,070)
Net assets acquired	\$28,664	\$10,416

The acquisitions listed above include escrow deposits of \$24.4 million, which may be released to the Company for indemnity and other claims in accordance with the purchase and escrow agreements.

The total goodwill and other intangible assets for acquisitions listed in the tables above was \$199.5 million, of which \$101.4 million and \$98.1 million was related to goodwill and other intangible assets, respectively. Of the allocation of \$98.1 million of acquired intangible assets, \$22.3 million was assigned to trade names, and \$70.2 million was assigned to customer relationships. The trade names are considered to have an indefinite useful life while the intellectual property and customer relationships' useful life is 20 years.

The Company also made smaller acquisitions not listed above which are individually and collectively immaterial.

The following unaudited pro forma financial information presents income statement results as if the acquisitions listed above had occurred January 1, 2017:

	For the year ended December 31,	
In thousands	2018	2017
Net sales	\$4,376,972	\$3,994,515
Gross profit	1,235,821	1,099,878
Net income attributable to Wabtec shareholders	292,207	273,301
Diluted earnings per share		
As Reported	\$3.05	\$2.72
Pro forma	\$3.06	\$2.84

The historical consolidated financial information of the Company and the acquisitions detailed above have been adjusted in the pro forma information to give effect to pro forma events that are (1) directly attributable to the transactions, (2) factually supportable and (3) expected to have a continuing impact on the combined results. Pro forma data may not be indicative of the results that would have been obtained had these acquisitions occurred at the beginning of the periods presented, nor is it intended to be a projection of future results.

4. MERGER OF WABTEC WITH GE TRANSPORTATION

Wabtec, General Electric Company ("GE"), Transportation System Holdings Inc. ("SpinCo"), which was a newly formed wholly owned subsidiary of GE, and Wabtec US Rail Holdings, Inc. ("Merger Sub"), which was a newly formed wholly owned subsidiary of the Company, entered into the Original Merger Agreement on May 20, 2018, and GE, SpinCo, Wabtec and Wabtec US Rail Holdings, Inc. ("Direct Sale Purchaser") entered into the Original Separation Agreement on May 20, 2018,

which together provided for the combination of Wabtec and GE Transportation. The Original Merger Agreement and Original Separation Agreement were subsequently amended on January 25, 2019 and the merger was completed on February 25, 2019.

In connection with the Direct Sale, certain assets of GE Transportation, including the equity interests of certain pre-Transaction subsidiaries of GE that compose part of GE Transportation, were sold to Direct Sale Purchaser for a cash payment of \$2.875 billion, and Direct Sale Purchaser assumed certain liabilities of GE Transportation in connection with this purchase. Thereafter, GE transferred the SpinCo Business to SpinCo and its subsidiaries (to the extent not already held by SpinCo and its subsidiaries), and SpinCo issued to GE shares of SpinCo Class A preferred stock, SpinCo Class B preferred stock, SpinCo Class C preferred stock and additional shares of SpinCo common stock in the SpinCo Transfer. Following this issuance of additional SpinCo common stock to GE, and immediately prior to the Distribution, GE owned 8,700,000,000 shares of SpinCo common stock, 15,000 shares of SpinCo Class A preferred stock, 10,000 shares of SpinCo Class B preferred stock and one share of SpinCo Class C preferred stock, which constituted all of the outstanding stock of SpinCo.

Following the Direct Sale, GE distributed the Distribution Shares of SpinCo in a spin-off transaction. Immediately after the Distribution, Merger Sub merged with and into SpinCo, whereby the separate corporate existence of Merger Sub ceased and SpinCo continued as the surviving company and a wholly owned subsidiary of Wabtec (except with respect to shares of SpinCo Class A preferred stock held by GE). In the Merger, subject to adjustment in accordance with the Merger Agreement, each share of SpinCo common stock converted into the right to receive a number of shares of Wabtec common stock based on the common stock exchange ratio set forth in the Merger Agreement and the share of SpinCo Class C preferred stock was converted into the right to receive (a) 10,000 shares of Wabtec convertible preferred stock and (b) a number of shares of Wabtec common stock equal to 9.9% of the fully-diluted pro forma Wabtec shares. Immediately prior to the Merger, Wabtec paid \$10.0 million in cash to GE in exchange for all of the shares of SpinCo Class B preferred stock.

Upon consummation of the Merger and calculated based on Wabtec's outstanding common stock on a fully-diluted, as-converted and as-exercised basis, as of December 31, 2018, approximately 49.2% of the outstanding shares of Wabtec common stock would be held collectively by GE and Spin-Off record date holders of GE common stock (with 9.9% to be held by GE directly in shares of Wabtec common stock and 15% underlying the shares of Wabtec convertible preferred stock to be held by GE) and approximately 50.8% of the outstanding shares of Wabtec common stock would be held by pre-Merger Wabtec stockholders. Following the effective time of the Merger, GE will also own 15,000 shares of SpinCo Class A preferred stock, and Wabtec will hold 10,000 shares of SpinCo Class B preferred stock. The shares of Wabtec common stock and Wabtec convertible preferred stock held by GE will be subject to GE's obligations under the Shareholders Agreement, including, among other things, and in each case subject to certain exceptions, (i) restrictions on the ability to sell, transfer or otherwise divest such shares for a period of 30 days and (ii) an obligation to sell, transfer or otherwise divest (A) by no later than 120 days following the closing date of the Merger, GE's (and its affiliates') ownership of Wabtec common stock and/or Wabtec convertible preferred stock so that GE (together with its affiliates) beneficially owns not less than 14.9% and not more than 19.9% of the number of shares of Wabtec common stock that were outstanding immediately after the closing of the Merger, (B) by no later than one year following the closing date of the Merger, GE's (and its affiliates') ownership of Wabtec common stock and/or Wabtec convertible preferred stock so that GE (together with its affiliates) beneficially owns not more than 18.5% of the number of shares of Wabtec common stock that were outstanding immediately after the closing of the Merger, in each case of clauses (A) and (B) treating the Wabtec convertible preferred stock as the Wabtec common stock into which it is convertible both for purposes of determining the number of shares of Wabtec common stock owned and for purposes of determining the number of shares of Wabtec common stock outstanding and (C) by no later than the third anniversary of the closing date of the Merger, all of the subject shares that GE (together with its affiliates) beneficially owns, and (iii) an obligation to vote all of such shares of Wabtec common stock in the proportion required under the Shareholders Agreement.

The estimated total value of the consideration to be paid by Wabtec in the Transactions was subject to the market price of shares of Wabtec common stock at the date of closing. Using Wabtec's closing stock price on the NYSE as of February 22, 2019, the total value of the consideration for the Transactions was approximately \$10.2 billion, including the Direct Sale Purchase Price, contingent consideration, assumed debt and net of cash acquired.

On September 14, 2018, Wabtec completed a public offering and sale of (i) \$500 million aggregate principal amount of floating rate senior notes, (ii) \$750 million aggregate principal amount of 2024 Senior Notes and (iii) \$1.25 billion aggregate principal amount of 2028 Senior Notes. The Company used the net proceeds from the offering and sale of these notes combined with the proceeds from a \$400 million delayed draw term loan that was entered into on June 8, 2018 to finance the Direct Sale. Wabtec used a portion of the proceeds from the September 14, 2018 notes to pay debt associated with its revolving credit facility. The remaining proceeds are classified as Restricted Cash on the consolidated balance sheet, as the Company used these cash amounts to finance the Direct Sale. Refer to Footnote 10 for further information regarding debt.

After the Merger, SpinCo, which is Wabtec's wholly owned subsidiary (except with respect to shares of SpinCo Class A preferred stock held by GE), holds the SpinCo Business and Direct Sale Purchaser, which also is Wabtec's wholly owned subsidiary, holds the assets purchased and the liabilities assumed in connection with the Direct Sale. Together, SpinCo and Direct Sale Purchaser own and operate the post-Transaction GE Transportation. All shares of the Company's common stock, including those issued in the Merger, are listed on the NYSE under the Company's current trading symbol "WAB."

On the date of the Distribution, GE or its subsidiaries and SpinCo or the SpinCo Transferred Subsidiaries entered into additional agreements relating to, among other things, intellectual property, employee matters, tax matters, research and development and transition services.

5. SUPPLEMENTAL CASH FLOW DISCLOSURES

	Year Ended December 31,		
	2018	2017	2016
In thousands			
Interest paid during the year	\$81,756	\$75,317	\$30,211
Income taxes paid during the year, net of amount refunded	\$83,949	\$89,379	\$121,563
Business acquisitions:			
Fair value of assets acquired	91,758	452,209	3,118,420
Liabilities assumed	32,908	207,788	1,453,382
Non-controlling interest (acquired) assumed	—	(761,786)	760,343
Stock and cash paid	58,850	1,006,207	904,695
Less: Cash acquired	7,697	35,408	186,903
Stock used for acquisition	—	25,500	534,679
Net cash paid	\$51,153	\$945,299	\$183,113

6. INVENTORIES

The components of inventory, net of reserves, were:

	December 31,	
In thousands	2018	2017
Raw materials	\$465,873	\$378,481
Work-in-progress	154,485	167,390
Finished goods	224,528	196,763
Total inventories	\$844,886	\$742,634

7. PROPERTY, PLANT & EQUIPMENT

The major classes of depreciable assets are as follows:

	December 31,	
In thousands	2018	2017
Machinery and equipment	\$749,782	\$728,257
Buildings and improvements	248,111	259,561
Land and improvements	38,657	38,228
Property, plant and equipment	1,036,550	1,026,046
Less: accumulated depreciation	(472,813)	(452,074)
Total	\$563,737	\$573,972

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

	Years
Land improvements	10 to 20
Building and improvements	20 to 40
Machinery and equipment	3 to 15

Depreciation expense was \$66.4 million, \$66.7 million, and \$47.1 million for 2018, 2017 and 2016, respectively.

8. INTANGIBLES

Goodwill and other intangible assets with indefinite lives are not amortized. Other intangibles with definite lives are amortized on a straight-line basis over their estimated economic lives. Goodwill and indefinite lived intangible assets are reviewed annually during the fourth quarter for impairment (See Note 2 "Summary of Significant Accounting Policies" included herein). Goodwill and indefinite live intangible assets were not impaired at December 31, 2018 and 2017.

The change in the carrying amount of goodwill by segment for the year ended December 31, 2018 is as follows:

In thousands	Freight Segment	Transit Segment	Total
Balance at December 31, 2017	\$718,958	\$1,741,145	\$2,460,103
Additions	6,478	16,790	23,268
Foreign currency impact	(12,045)	(74,782)	(86,827)
Balance at December 31, 2018	\$713,391	\$1,683,153	\$2,396,544

As of December 31, 2018 and 2017, the Company's trade names had a net carrying amount of \$582.8 million and \$603.4 million, respectively, and the Company believes these intangibles have indefinite lives. Intangible assets of the Company, other than goodwill and trade names, consist of the following:

In thousands	December 31,	
	2018	2017
Patents, non-compete and other intangibles, net of accumulated amortization of \$42,446 and \$43,021	\$15,328	\$17,554
Customer relationships, net of accumulated amortization of \$158,533 and \$126,824	531,761	583,459
Total	\$547,089	\$601,013

The remaining weighted average useful lives of patents, customer relationships and intellectual property were 10 years, 16 years and 13 years respectively. Amortization expense for intangible assets was \$39.8 million, \$36.5 million, and \$22.7 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Estimated amortization expense for the five succeeding years is as follows (in thousands):

2019	\$38,289
2020	36,552
2021	35,595
2022	35,283
2023	34,945

9. CONTRACT ASSETS AND CONTRACT LIABILITIES

Contract assets include unbilled amounts resulting from sales under long-term contracts where revenue is recognized over time and revenue exceeds the amount that can be billed to the customer based on the terms of the contract.

Contract liabilities include customer deposits that are made prior to the incurrence of costs related to a newly agreed upon contract, advanced customer payments that are in excess of revenue recognized, and provisions for estimated losses from uncompleted contracts.

The change in the carrying amount of contract assets and contract liabilities for the twelve months ended December 31, 2018 is as follows:

In thousands	Contract Assets
Balance at beginning of year	\$366,168
Recognized in current year	426,829
Reclassified to accounts receivable	(432,307)
Foreign currency impact	(15,105)
Balance at December 31, 2018	\$345,585

In thousands	Contract Liabilities
Balance at beginning of year	\$463,704
Recognized in current year	230,159
Amounts in beginning balance reclassified to revenue	(199,735)
Current year amounts reclassified to revenue	(30,914)
Foreign currency impact	(18,409)
Balance at December 31, 2018	\$444,805

10. LONG-TERM DEBT

Long-term debt consisted of the following:

In thousands	December 31,	
	2018	2017
Floating Senior Notes, due 2021, net of unamortized debt issuance costs of \$3,204	\$496,796	\$—
4.150% Senior Notes, due 2024, net of unamortized debt issuance costs of \$7,043	742,957	—
4.70% Senior Notes, due 2028, net of unamortized debt issuance costs of \$10,343	1,239,657	—
3.45% Senior Notes, due 2026, net of unamortized debt issuance costs of \$1,718 and \$2,345	748,282	747,655
4.375% Senior Notes, due 2023, net of unamortized discount and debt issuance costs of \$1,177 and \$1,433	248,823	248,567
Revolving Credit Facility, net of unamortized debt issuance costs of \$3,138 and \$2,451	338,112	853,124
Other Borrowings	42,246	21,182
Total	3,856,873	1,870,528
Less - current portion	64,099	47,225
Long-term portion	\$3,792,774	\$1,823,303

On September 14, 2018 the Company issued \$2.5 billion of senior notes with three different maturities.

Floating Rate Senior Notes due 2021 - The Company issued \$500.0 million of Floating Rate Senior Notes due 2021 (the "Floating Rate Notes"). The Floating Rate Notes, which are non-callable for one year, were issued at 100% of face value. Interest on the Floating Rate Notes accrues at a floating rate per annum equal to three-month Libor plus 105 basis points. The interest rate for the Floating Rate Notes for the initial interest period was the three-month Libor plus 105 basis points determined on September 12, 2018 and is payable quarterly on December 15, March 15, June 15, and September 15 of each year. The Company incurred \$3.5 million of deferred financing costs related to the issuance of the Floating Rate Notes.

4.150% Senior Notes due 2024 - The Company issued \$750.0 million of 4.150% Senior Notes due 2024 (the "2024 Notes"). The 2024 Notes were issued at 99.805% of face value. Interest on the 2024 Notes accrues at a rate of 4.150% per annum and is payable semi-annually on March 15 and September 15 of each year. The Company incurred \$7.4 million of deferred financing costs related to the issuance of the 2024 Notes.

4.70% Senior Notes Due 2028 - The Company issued \$1,250.0 million of 4.70% Senior Notes due 2028 (the "2028 Notes" and together with the Floating Rate Notes and 2024 Notes, the "Senior Notes"). The 2028 Notes were issued at 99.889% of face value. Interest on the 2028 Notes accrues at a rate of 4.700% per annum and is payable semi-annually on March 15 and September 15 of each year. The Company incurred \$10.6 million of deferred financing costs related to the issuance of the 2028 Notes.

The net proceeds from the issuance and sale of the Senior Notes was used to finance the cash portion of the GE Transportation acquisition. The principal balances are due in full at maturity. The Senior Notes are senior unsecured obligations of the Company and rank pari passu with all existing and future senior debt and senior to all existing and future subordinated indebtedness of the Company. The indenture under which the Senior Notes were issued contains covenants and restrictions which limit among other things, the following: the incurrence of indebtedness, payment of dividends and certain distributions, sales of assets, change in control, mergers and consolidations and the incurrence of liens.

On February 12, 2019, the rating assigned by Moody's was decreased to Ba1. Accordingly, pursuant to the respective terms of the Senior Notes issued on September 14, 2018, the interest rate shall be increased by 0.25%. The interest

rate increase shall take effect from the next interest period following February 12, 2019.

The Company is in compliance with the restrictions and covenants in the indenture under which the Senior Notes were issued and expects that these restrictions and covenants will not be any type of limiting factor in executing our operating activities.

3.45% Senior Notes Due November 2026

In October 2016, the Company issued \$750.0 million of Senior Notes due in 2026 (the “2016 Notes”). The 2016 Notes were issued at 99.965% of face value. Interest on the 2016 Notes accrues at a rate of 3.45% per annum and is payable semi-annually on May 15 and November 15 of each year. The proceeds were used to finance the cash portion of the Faiveley Transport acquisition, refinance Faiveley Transport’s indebtedness, and for general corporate purposes. The principal balance is due in full at maturity. The Company incurred \$2.7 million of deferred financing costs related to the issuance of the 2016 Notes.

The 2016 Notes are senior unsecured obligations of the Company and rank pari passu with all existing and future senior debt and senior to all existing and future subordinated indebtedness of the Company. The indenture under which the 2016 Notes were issued contains covenants and restrictions which limit among other things, the following: the incurrence of indebtedness, payment of dividends and certain distributions, sale of assets, change in control, mergers and consolidations and the incurrence of liens.

The Company is in compliance with the restrictions and covenants in the indenture under which the 2016 Notes were issued and expects that these restrictions and covenants will not be any type of limiting factor in executing our operating activities.

4.375% Senior Notes Due August 2023

In August 2013, the Company issued \$250.0 million of Senior Notes due in 2023 (the “2013 Notes”). The 2013 Notes were issued at 99.879% of face value. Interest on the 2013 Notes accrues at a rate of 4.375% per annum and is payable semi-annually on February 15 and August 15 of each year. The proceeds were used to repay debt outstanding under the Company’s existing credit agreement, and for general corporate purposes. The principal balance is due in full at maturity. The Company incurred \$2.6 million of deferred financing costs related to the issuance of the 2013 Notes.

The 2013 Notes are senior unsecured obligations of the Company and rank pari passu with all existing and future senior debt and senior to all existing and future subordinated indebtedness of the Company. The indenture under which the 2013 Notes were issued contains covenants and restrictions which limit among other things, the following: the incurrence of indebtedness, payment of dividends and certain distributions, sale of assets, change in control, mergers and consolidations and the incurrence of liens.

The Company is in compliance with the restrictions and covenants in the indenture under which the 2013 Notes were issued and expects that these restrictions and covenants will not be any type of limiting factor in executing our operating activities.

2018 Refinancing Credit Agreement

On June 8, 2018, the Company entered into a credit agreement (the “2018 Refinancing Credit Agreement”), which replaced the Company’s then-existing “2016 Refinancing Credit Agreement.” As part of the 2018 Refinancing Credit Agreement, the Company entered into (i) a \$1.2 billion revolving credit facility (the “Revolving Credit Facility”), which replaced the Company’s revolving credit facility under the 2016 Refinancing Credit Agreement, and includes a letter of credit sub-facility of up to \$450.0 million and a swing line sub-facility of \$75.0 million, (ii) a \$350.0 million term loan (the “Refinancing Term Loan”), which refinanced the term loan under the 2016 Refinancing Credit Agreement, and (iii) a new \$400.0 million delayed draw term loan (the “Delayed Draw Term Loan”). The 2018 Refinancing Credit Agreement also provided for a bridge loan facility (the “Bridge Loan Facility”) in an amount not to exceed \$2.5 billion, such facility to become effective at the Company’s request. Commitments in respect of the Bridge Loan Facility were terminated upon the issuance and sale of the Senior Notes on September 14, 2018. In addition, the 2018 Refinancing Credit Agreement contains an uncommitted accordion feature allowing the Company to request, in an aggregate amount not to exceed \$600.0 million, increases to the borrowing commitments under the Revolving Credit Facility or a new incremental term loan commitment. At December 31, 2018, the Company had available bank borrowing capacity, net of \$29.2 million of letters of credit, of approximately \$1,170.8 million subject to certain financial covenant restrictions.

The Revolving Credit Facility matures on June 8, 2023 and is unsecured. The Refinancing Term Loan matures on June 8, 2021 and is unsecured. The Delayed Draw Term Loan matures on the third anniversary of the date on which it is borrowed and is unsecured. The applicable interest rate for borrowings under the 2018 Refinancing Credit Agreement includes interest rate spreads based on the lower of the pricing corresponding to (i) the Company’s ratio of total debt (less unrestricted cash up to \$300.0 million) to EBITDA (“Leverage Ratio”) or (ii) the Company’s public rating, in each case that range between 1.000% and 1.875% for LIBOR/CDOR-based borrowings and 0.0% and 0.875% for Alternate Base Rate based borrowings. The obligations of the Company under the 2018 Refinancing Credit Agreement have been guaranteed by certain of the Company’s subsidiaries.

The 2018 Refinancing Credit Agreement contains customary representations and warranties by the Company and its subsidiaries, including customary use of materiality, material adverse effect, and knowledge qualifiers. The Company and its subsidiaries are also subject to (i) customary affirmative covenants that impose certain reporting obligations on the Company and its subsidiaries and (ii) customary negative covenants, including limitations on: indebtedness; liens; restricted payments; fundamental changes; business activities; transactions with affiliates; restrictive agreements; changes in fiscal year; and use of proceeds. In addition, the Company is required to maintain (i) an Interest Coverage ratio at least 3.00 to 1.00 over each period of four consecutive fiscal quarters ending on the last day of a fiscal quarter and (ii) a Leverage Ratio, calculated as of the last day of a fiscal quarter for a period of four consecutive fiscal quarters, of 3.25 to 1.00 or less; provided that, in the event the Company completes the Direct Sale and the Merger or any other material acquisition in which the cash consideration paid exceeds \$500.0 million, the maximum Leverage Ratio permitted will be 3.75 to 1.00 at the end of the fiscal quarter in which such acquisition is consummated and each of the three fiscal quarters immediately following such fiscal quarter and 3.50 to 1.00 at the end of each of the fourth and fifth full fiscal quarters after the consummation of such acquisition. The Company is in compliance with the restrictions and covenants of the 2018 Refinancing Credit Agreement and does not expect that these measurements will limit the Company in executing its operating activities.

At December 31, 2018, the weighted average interest rate on the Company’s variable rate debt was 3.68%. On June 5, 2014, the Company entered into a forward starting interest rate swap agreement with a notional value of \$150.0 million. The effective date of the interest rate swap agreement was November 7, 2016, and the termination date was December 19, 2018.

2016 Refinancing Credit Agreement

On June 22, 2016, the Company amended its existing revolving credit facility with a consortium of commercial banks. This “2016 Refinancing Credit Agreement” provided the Company with a \$1.2 billion, 5 year revolving credit facility and a \$400.0 million delayed draw term loan (the “Term Loan”). The Company incurred approximately \$3.3 million of deferred financing cost related to the 2016 Refinancing Credit Agreement. The 2016 Refinancing Credit Agreement borrowings bore variable interest rates indexed as described below.

Under the 2016 Refinancing Credit Agreement, the Company could elect a Base Rate of interest for U.S. Dollar denominated loans or, for certain currencies, an interest rate based on the London Interbank Offered Rate (“LIBOR”) of interest, or other rates appropriate for such currencies (in any case, “the Alternate Rate”). The Base Rate adjusted on a daily basis and was the greater of the Federal Funds Effective Rate plus 0.50% per annum, the PNC, N.A. prime rate or the Daily LIBOR Rate plus 100 basis points, plus a margin that ranged from 0 to 75 basis points. The Alternate Rate was based on the quoted rates specific to the applicable currency, plus a margin that ranged from 75 to 175 basis points. Both the Base Rate and Alternate Rate margins were dependent on the Company’s consolidated total indebtedness to EBITDA ratios. The initial Base Rate margin was 0 basis points and the Alternate Rate margin is 175 basis points.

Debt and Capital Leases

Scheduled principal repayments of debt and capital lease balances as of December 31, 2018 are as follows:

2019	\$64,099
2020	36,387
2021	764,980
2022	54
2023	248,873

Future years	2,742,480
Total	\$3,856,873

11. EMPLOYEE BENEFIT PLANS

Defined Benefit Pension Plans

The Company sponsors defined benefit pension plans that cover certain U.S., Canadian, German, and United Kingdom employees and which provide benefits of stated amounts for each year of service of the employee. The Company uses a December 31 measurement date for the plans.

The following tables provide information regarding the Company's defined benefit pension plans summarized by U.S. and international components.

Obligations and Funded Status

In thousands	U.S.		International	
	2018	2017	2018	2017
Change in projected benefit obligation				
Obligation at beginning of year	\$(44,213)	\$(45,512)	\$(353,017)	\$(319,551)
Opening balance sheet adjustment	—	—	—	(5,321)
Service cost	(349)	(344)	(2,611)	(2,740)
Interest cost	(1,332)	(1,422)	(7,047)	(7,310)
Employee contributions	—	—	(448)	(880)
Plan settlements and amendments	—	—	15,191	4,153
Benefits paid	3,476	3,079	13,453	12,906
Acquisition	—	—	(864)	—
Actuarial gain (loss)	2,942	(14)	6,740	(3,009)
Effect of currency rate changes	—	—	19,337	(31,265)
Obligation at end of year	\$(39,476)	\$(44,213)	\$(309,266)	\$(353,017)
Change in plan assets				
Fair value of plan assets at beginning of year	\$37,432	\$35,802	\$281,602	\$241,283
Opening balance sheet adjustment	—	—	—	2,058
Actual return on plan assets	(1,983)	4,223	(6,938)	19,102
Employer contributions	—	486	10,821	13,479
Employee contributions	—	—	448	880
Benefits paid	(3,476)	(3,079)	(13,453)	(12,905)
Settlements	—	—	(16,601)	(4,523)
Effect of currency rate changes	—	—	(16,380)	22,228
Fair value of plan assets at end of year	\$31,973	\$37,432	\$239,499	\$281,602
Funded status				
Fair value of plan assets	\$31,973	\$37,432	\$239,499	\$281,602
Benefit obligations	(39,476)	(44,213)	(309,266)	(353,017)
Funded status	\$(7,503)	\$(6,781)	\$(69,767)	\$(71,415)
Amounts recognized in the statement of financial position consist of:				
Noncurrent assets	\$—	\$—	\$8,910	\$10,577
Current liabilities	—	—	(2,062)	(2,158)
Noncurrent liabilities	(7,503)	(6,781)	(76,615)	(79,834)
Net amount recognized	\$(7,503)	\$(6,781)	\$(69,767)	\$(71,415)
Amounts recognized in accumulated other comprehensive income (loss) consist of:				
Prior service cost	(3)	(6)	(1,419)	(32)
Net actuarial loss	(20,268)	(20,418)	(58,748)	(54,043)
Net amount recognized	\$(20,271)	\$(20,424)	\$(60,167)	\$(54,075)

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The aggregate accumulated benefit obligation for the U.S. pension plans was \$38.8 million and \$43.3 million as of December 31, 2018 and 2017, respectively. The aggregate accumulated benefit obligation for the international pension plans was \$301.1 million and \$344.3 million as of December 31, 2018 and 2017, respectively.

In thousands	U.S.		International	
	2018	2017	2018	2017
Information for pension plans with accumulated benefit obligations in excess of Plan assets:				
Projected benefit obligation	\$(39,476)	\$(44,213)	\$(251,010)	\$(282,077)
Accumulated benefit obligation	(38,805)	(43,340)	(243,613)	(274,557)
Fair value of plan assets	31,973	37,432	172,333	200,218
Information for pension plans with projected benefit obligations in excess of plan assets:				
Projected benefit obligation	\$(39,476)	\$(44,213)	\$(251,010)	\$(283,106)
Fair value of plan assets	31,973	37,432	172,333	201,115

Components of Net Periodic Benefit Costs

In thousands	U.S.			International		
	2018	2017	2016	2018	2017	2016
Service cost	\$349	\$344	\$337	\$2,611	\$2,740	\$1,379
Interest cost	1,332	1,422	1,475	7,047	7,310	5,774
Expected return on plan assets	(1,780)	(1,731)	(2,076)	(13,458)	(12,412)	(9,971)
Amortization of initial net obligation and prior service cost	3	3	3	22	27	61
Amortization of net loss	970	989	914	2,149	2,846	1,818
Settlement and curtailment losses recognized	—	—	—	3,112	768	218
Net periodic benefit cost	\$874	\$1,027	\$653	\$1,483	\$1,279	\$(721)

Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income during 2018 are as follows:

In thousands	U.S.	International
Net gain (loss) arising during the year	\$(820)	\$(13,655)
Effect of exchange rates	—	3,690
Amortization, settlement, or curtailment recognition of net transition obligation	—	3,112
Amortization or curtailment recognition of prior service cost	3	(1,388)
Amortization or settlement recognition of net loss	970	2,149
Total recognized in other comprehensive gain	\$153	\$(6,092)
Total recognized in net periodic benefit cost and other comprehensive gain	\$(721)	\$(7,575)

The weighted average assumptions in the following table represent the rates used to develop the actuarial present value of the projected benefit obligation for the year listed.

	U.S.			International		
	2018	2017	2016	2018	2017	2016
Discount rate	4.30%	3.56%	3.95%	2.53%	2.40%	2.51%
Expected return on plan assets	5.15%	4.95%	5.70%	5.10%	5.02%	6.07%
Rate of compensation increase	3.00%	3.00%	3.00%	2.61%	2.54%	2.54%

The discount rate is based on settling the pension obligation with high grade, high yield corporate bonds, and the rate of compensation increase is based on actual experience. The expected return on plan assets is based on historical performance as well as expected future rates of return on plan assets considering the current investment portfolio mix and the long-term investment strategy.

As of December 31, 2018, the following table represents the amounts included in other comprehensive loss that are expected to be recognized as components of periodic benefit costs in 2019.

In thousands	U.S.	International
Prior service cost	3	53
Net actuarial loss	826	2,512
	\$829	\$ 2,565

Pension Plan Assets

The Company has established formal investment policies for the assets associated with our pension plans. Objectives include maximizing long-term return at acceptable risk levels and diversifying among asset classes. Asset allocation targets are based on periodic asset liability study results which help determine the appropriate investment strategies. The investment policies permit variances from the targets within certain parameters. The plan assets consist primarily of equity security funds, debt security funds, and temporary cash and cash equivalent investments. The assets held in these funds are generally actively managed and are valued at the net asset value per share multiplied by the number of shares held as of the measurement date. (See Note 20 "Fair Value Measurement" included herein). Plan assets by asset category at December 31, 2018 and 2017 are as follows:

In thousands	U.S.		International	
	2018	2017	2018	2017
Pension Plan Assets				
Equity security funds	\$13,162	\$18,122	\$95,058	\$100,453
Debt security funds and other	17,528	18,304	140,894	178,730
Cash and cash equivalents	1,283	1,006	3,547	2,419
Fair value of plan assets	\$31,973	\$37,432	\$239,499	\$281,602

The U.S. plan has a target asset allocation of 50% equity securities and 50% debt securities. The International plan has a target asset allocation of 31% equity securities, 40% debt securities and 29% in other investments. Investment policies are determined by the respective Plan's Pension Committee and set forth in its Investment Policy. Rebalancing of the asset allocation occurs on a quarterly basis.

The following tables summarize our pension plan assets measured at fair value on a recurring basis by fair value hierarchy level (See Note 20):

In thousands	December 31, 2018				Total
	NAV	Level 1	Level 2	Level 3	
US:					
Equity	\$—	\$13,162	\$—	\$—	\$13,162
Debt Securities and other	—	4,523	13,005	—	17,528
Cash and cash equivalents	—	1,283	—	—	1,283
International:					
Equity	\$3,710	\$34,848	\$56,500	\$—	\$95,058
Debt Securities and other	—	—	125,587	—	125,587
Insurance Contracts	—	—	5,383	9,924	15,307
Cash and cash equivalents	—	3,547	—	—	3,547
Total	\$3,710	\$57,363	\$200,475	\$9,924	\$271,472

In thousands	December 31, 2017				
	NAV	Level 1	Level 2	Level 3	Total
US:					
Equity	\$—	\$18,122	\$—	\$—	\$18,122
Debt Securities	—	4,273	14,031	—	18,304
Cash and cash equivalents	—	1,006	—	—	1,006
International:					
Equity	\$4,586	\$38,647	\$95,641	\$—	\$138,874
Debt Securities	—	—	111,204	—	111,204
Insurance Contracts	—	—	15,893	13,123	29,016
Cash and cash equivalents	—	2,507	—	—	2,507
Total	\$4,586	\$64,555	\$236,769	\$13,123	\$319,033

The following table presents a reconciliation of Level 3 assets:

In thousands	Total
Balance at December 31, 2016	\$12,996
Net purchases, issuances, and settlements	778
Actual return of plan assets	375
Opening balance sheet adjustment	(1,308)
Effect of currency rate changes	282
Balance at December 31, 2017	\$13,123
Net purchases, issuances, and settlements	(3,611)
Actual return of plan assets	277
Transfers	658
Effect of currency rate changes	(523)
Balance at December 31, 2018	\$9,924

Cash Flows

The Company's funding methods are based on governmental requirements and differ from those methods used to recognize pension expense. The Company expects to contribute \$6.4 million to the international plans during 2019.

The company does not expect to make contributions to the U.S. plans during 2019.

Benefit payments expected to be paid to plan participants are as follows:

In thousands	U.S.	International
Year ended December 31,		
2019	\$3,233	\$ 11,556
2020	3,242	12,017
2021	3,100	12,489
2022	3,095	13,353
2023	3,077	13,583
2024 through 2028	13,623	75,457

Postretirement Benefit Plans

In addition to providing pension benefits, the Company has provided certain unfunded postretirement health care and life insurance benefits for a portion of North American employees. The Company is not obligated to pay health care and life insurance benefits to individuals who had retired prior to 1990.

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The Company uses a December 31 measurement date for all postretirement plans. The following tables provide information regarding the Company's post retirement benefit plans summarized by U.S. and international components. Obligations and Funded Status

In thousands	U.S.		International	
	2018	2017	2018	2017
Change in projected benefit obligation				
Obligation at beginning of year	\$(11,345)	\$(11,876)	\$(3,720)	\$(3,425)
Service cost	(5)	(5)	(31)	(28)
Interest cost	(326)	(350)	(100)	(98)
Benefits paid	786	970	201	199
Actuarial gain (loss)	1,072	(84)	646	(131)
Effect of currency rate changes	—	—	335	(237)
Obligation at end of year	\$(9,818)	\$(11,345)	\$(2,669)	\$(3,720)
Change in plan assets				
Fair value of plan assets at beginning of year	\$—	\$—	\$—	\$—
Employer contributions	786	970	201	199
Benefits paid	(786)	(970)	(201)	(199)
Fair value of plan assets at end of year	\$—	\$—	\$—	\$—
Funded status				
Fair value of plan assets	\$—	\$—	\$—	\$—
Benefit obligations	(9,818)	(11,345)	(2,669)	(3,720)
Funded status	\$(9,818)	\$(11,345)	\$(2,669)	\$(3,720)

In thousands	U.S.		International	
	2018	2017	2018	2017
Amounts recognized in the statement of financial position consist of:				
Current liabilities	\$(984)	\$(1,046)	\$(175)	\$(208)
Noncurrent liabilities	(8,834)	(10,299)	(2,494)	(3,512)
Net amount recognized	\$(9,818)	\$(11,345)	\$(2,669)	\$(3,720)
Amounts recognized in accumulated other comprehensive income (loss) consist of:				
Prior service credit	18,097	19,616	2	9
Net actuarial (loss) gain	(16,593)	(18,882)	748	154
Net amount recognized	\$1,504	\$734	\$750	\$163

Components of Net Periodic Benefit Cost

In thousands	U.S.			International		
	2018	2017	2016	2018	2017	2016
Service cost	\$5	\$5	\$4	\$31	\$28	\$29
Interest cost	326	350	389	100	98	99
Amortization of initial net obligation and prior service cost	(1,519)	(1,519)	(1,709)	(7)	(7)	(7)
Amortization of net loss (gain)	1,216	1,225	1,287	(8)	(23)	(29)
Net periodic benefit cost (credit)	\$28	\$61	\$(29)	\$116	\$96	\$92

Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income during 2018 are as follows:

In thousands	U.S.	International
Net loss arising during the year	1,072	646
Effect of exchange rates	—	(44)
Amortization or curtailment recognition of prior service cost	(1,519)	(7)
Amortization or settlement recognition of net loss (gain)	1,216	(8)
Total recognized in other comprehensive income (loss)	\$769	\$ 587
Total recognized in net periodic benefit cost and other comprehensive income (loss)	\$741	\$ 471

The weighted average assumptions in the following table represent the rates used to develop the actuarial present value of the projected benefit obligation for the year listed and also the net periodic benefit cost for the following year. The discount rate is based on settling the pension obligation with high grade, high yield corporate bonds.

80

	U.S.			International		
	2018	2017	2016	2018	2017	2016
Discount rate	4.17%	3.43%	3.76%	3.49%	3.21%	3.46%

As of December 31, 2018, the following table represents the amounts included in other comprehensive loss that are expected to be recognized as components of periodic benefit costs in 2019.

In thousands	U.S.		International	
Prior service credit	(1,519)	(2)		
Net actuarial loss (gain)	1,116	(88)		
Total	\$(403)	\$ (90)		

The assumed health care cost trend rate for the U.S. plans grades from an initial rate of 6.30% to an ultimate rate of 4.50% by 2028 and for international plans from 6.04% to 4.50% by 2027.

Cash Flows

Benefit payments expected to be paid to plan participants are as follows:

In thousands	U.S.		International	
Year ended December 31,				
2019	\$ 983	\$ 175		
2020	949	171		
2021	920	181		
2022	879	184		
2023	854	196		
2024 through 2028	3,661	912		

Defined Contribution Plans

The Company also participates in certain defined contribution plans and multiemployer pension plans. Costs recognized under these plans are summarized as follows:

In thousands	For the year ended		
	December 31,		
	2018	2017	2016
Multi-employer pension and health & welfare plans	\$965	\$1,522	\$2,054
401(k) savings and other defined contribution plans	27,869	23,209	23,062
Total	\$28,834	\$24,731	\$25,116

The 401(k) savings plan is a participant directed defined contribution plan that holds shares of the Company's stock as one of the investment options. At December 31, 2018 and 2017, the plan held on behalf of its participants about 442,239 shares with a market value of \$31.1 million, and 495,274 shares with a market value of \$40.3 million, respectively.

Additionally, the Company has stock option based benefit and other plans further described in Note 14.

The Company contributes to a multi-employer defined benefit pension plan under a collective bargaining agreement that covers certain of its union-represented employees. The risks of participating in such plans are different from the risks of single-employer plans. Assets contributed to a multi-employer plan by one employer may be used to provide benefits to employees of other participating employers. If a participating employer ceases to contribute to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers. If the Company ceases to have an obligation to contribute to the multi-employer plan in which it had been a contributing employer, it may be required to pay to the plan an amount based on the underfunded status of the plan and on the history of the Company's participation in the plan prior to the cessation of its obligation to contribute. The amount that an employer that has ceased to have an obligation to contribute to a multi-employer plan is required to pay to the plan is referred to as a withdrawal liability.

The Company's participation in multi-employer plans for the year ended December 31, 2018 is outlined in the table below. For plans that are not individually significant to the Company, the total amount of contributions is presented in the aggregate.

Pension Fund	EIN/PN (a)	Pension Protection Act Zone Status (b)		FIP/ RP Status Pending/ Implemented (c)	Contributions by the Company			Surcharge Imposed (d)	Expiration Dates of Collective Bargaining Agreements
		2017	2016		2018	2017	2016		
Idaho Operating Engineers-Employers Pension Trust Fund	EIN # 91-6075538 Plan#001	Green	Green	No	\$965 (1)	\$1,020 (1)	\$1,306 (1)	No	8/6/2021
Total Contributions					\$965	\$1,020	\$1,306		

(1) The Company's contribution represents more than 5% of the total contributions to the plan.

(a) The "EIN / PN" column provides the Employer Identification Number and the three-digit plan number assigned to a plan by the Internal Revenue Service.

The most recent Pension Protection Act Zone Status available for 2018 and 2017 is for plan years that ended in 2017 and 2016, respectively. The zone status is based on information provided to the Company and other participating employers by each plan and is certified by the plan's actuary. A plan in the "red" zone has been

(b) determined to be in "critical status", based on criteria established under the Internal Revenue Code ("Code"), and is generally less than 65% funded. A plan in the "yellow" zone has been determined to be in "endangered status", based on criteria established under the Code, and is generally less than 80% funded. A plan in the "green" zone has been determined to be neither in "critical status" nor in "endangered status" and is generally at least 80% funded.

(c) The "FIP/RP Status Pending/Implemented" column indicates whether a Funding Improvement Plan, as required under the Code to be adopted by plans in the "yellow" zone, or a Rehabilitation Plan, as required under the Code to be adopted by plans in the "red" zone, is pending or has been implemented as of the end of the plan year that ended in 2018.

(d) The "Surcharge Imposed" column indicates whether the Company's contribution rate for 2018 included an amount in addition the contribution rate specified in the applicable collective bargaining agreement, as imposed by a plan in "critical status", in accordance with the requirements of the Code.

12. INCOME TAXES

The Company is responsible for filing consolidated U.S., foreign and combined, unitary or separate state income tax returns. The Company is responsible for paying the taxes relating to such returns, including any subsequent adjustments resulting from the redetermination of such tax liabilities by the applicable taxing authorities.

On December 23, 2017, the French government enacted the Finance Act for 2018 and it was published in the Official Bulletin on December 31, 2017. The Finance act reduced the French corporate tax rate from 28% in 2020 to 25%, enacting an additional 1.5% reduction in each year 2021 and 2022.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act makes broad and complex changes to the U.S. tax code that affected fiscal 2017, including, but not limited to requiring a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries that is payable over eight years (the "Transition Tax"). The Tax Act also established new tax laws

that affect 2018 and later years, including, but not limited to, a reduction of the U.S. federal corporate tax rate from 35% to 21%, repeals the Domestic Manufacturing Deduction, a general elimination of U.S. federal income taxes on dividends from foreign subsidiaries, new provisions designed to tax global intangible low-taxed income ("GILTI"), tax certain deductible base erosion payments called base erosion and anti-abuse tax ("BEAT"), and new interest expense limitation provisions.

In relation to the analysis of the impact of the all tax law changes, the Company recorded a net tax expense of \$4.3 million in fiscal 2017. This included a provisional expense for the U.S. tax reform bill of \$55.0 million, as well as a net benefit for the revaluation of deferred tax assets and liabilities of \$50.7 million. Of this amount, net tax expense of \$27.2 million is related to the Tax Act and a benefit of \$22.9 million is related to the French Finance Act for 2018. In the current year, the Company has completed its accounting for the income tax effects of the Tax Act. The Company has adjusted the provisional amounts previously recorded in accordance with SEC Staff Accounting Bulletin No. 118. As such, the Company has included the following tax provisions in its financial statements as of December 31, 2018:

Revaluation of deferred tax assets and liabilities: The Tax Act reduces the U.S. federal corporate tax rate from 35% to 21% for tax years beginning after December 31, 2017. In addition, the Tax Act made certain changes to the depreciation rules and implemented new limits on the deductibility of certain executive compensation. The Company evaluated these changes and recorded a provisional benefit to net deferred taxes of \$24.6 million at December 31, 2017. As a result of the completion of its 2017 U.S. corporate tax return in the current year, the Company has adjusted its U.S. deferred tax balances which has resulted

in a current period benefit of \$5.1 million. The Company has completed its calculation of the impact of these changes on its deferred tax balances. As of December 31, 2018, the Company has completed its analysis of the impact of the Tax Act on the deductibility of certain executive compensation. As a result, no further adjustments were made as of December 31, 2018.

Transition Tax on unrepatriated foreign earnings: The Transition Tax on unrepatriated foreign earnings is a tax on previously untaxed accumulated and current earnings and profits ("E&P") of the Company's foreign subsidiaries. To determine the amount of the Transition Tax, the Company had to determine, among other factors, the amount of post-1986 E&P of its foreign subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. The Company was able to make a reasonable estimate of the Transition Tax and recorded a provisional Transition Tax expense of \$51.8 million at December 31, 2017. As of December 31, 2018, the Company has completed its calculation of the Transition Tax which resulted in a benefit of \$14.4 million for the twelve months ended December 31, 2018.

Global intangible low taxed income ("GILTI"): The Tax Act created a new requirement that certain income (i.e., GILTI) earned by foreign subsidiaries must be included currently in the gross income of the U.S. shareholder. Under U.S. GAAP, the Company is permitted to make an accounting policy election to either treat taxes due on future inclusions in U.S. taxable income related to GILTI as a current-period expense when incurred or to factor such amounts into the Company's measurement of its deferred taxes. The Company has made the election to treat taxes due on future inclusions related to GILTI as current period expense and has included a current period expense of \$9.3 million in its financial statements as of December 31, 2018.

Indefinite reinvestment assertion: Beginning in 2018, the Tax Act provides a 100% deduction for dividends received from 10-percent owned foreign corporations by U.S. corporate shareholders, subject to a one-year holding period. Although dividend income is now exempt from U.S. federal tax in the hands of the U.S. corporate shareholders, companies must still apply the guidance of ASC 740 to account for the tax consequences of outside basis differences and other tax impacts of their investments in non-U.S. subsidiaries. While the Company has finalized its calculation of the Transition Tax on the deemed repatriated earnings that were previously indefinitely reinvested, the Company was unable to determine a reasonable estimate of the remaining tax liability, if any, under the Tax Act for its remaining outside basis differences. Therefore, the Company has not included a provisional amount for this item in its financial statements for fiscal year ended December 31, 2018.

The components of the income from operations before provision for income taxes for the Company's domestic and foreign operations for the years ended December 31 are provided below:

In thousands	For the year ended		
	December 31,		
	2018	2017	2016
Domestic	\$145,096	\$140,325	\$276,218
Foreign	222,486	211,738	136,619
Income from operations before income taxes	\$367,582	\$352,063	\$412,837

The consolidated provision for income taxes included in the Statement of Income consisted of the following:

In thousands	For the year ended		
	December 31,		
	2018	2017	2016
Current taxes			
Federal	\$6,940	\$86,157	\$72,317
State	5,771	3,644	9,953
Foreign	68,467	67,395	27,391
	81,178	157,196	109,661
Deferred taxes			
Federal	4,689	(22,863)	11,013
State	1,263	(1,024)	1,953
Foreign	(11,251)	(43,536)	(23,194)
	(5,299)	(67,423)	(10,228)

Total provision \$75,879 \$89,773 \$99,433

83

A reconciliation of the United States federal statutory income tax rate to the effective income tax rate on operations for the years ended December 31 is provided below:

In thousands	For the year ended		
	December 31,		
	2018	2017	2016
U.S. federal statutory rate	21.0 %	35.0 %	35.0 %
State taxes	1.6	0.4	2.1
Foreign	0.7	(8.3)	(4.3)
Research and development credit	(1.1)	(0.8)	(1.0)
Manufacturing deduction	—	(1.1)	(1.8)
France tax rate change	—	(6.5)	(6.5)
U.S. tax rate change	(0.6)	(7.9)	—
U.S. tax reform (benefit) provision	(1.4)	15.6	—
Transaction costs related to acquisitions	—	—	1.5
Other, net	0.4	(0.9)	(0.9)
Effective rate	20.6 %	25.5 %	24.1 %

The decrease in the effective tax rate in 2018 is primarily due to the application of the U.S. tax rate change which resulted in the reduction of the corporate income tax rate in the U.S. from 35.0% to 21.0%, a higher earnings mix in lower tax jurisdictions as well as a benefit from the completion of the accounting for the income tax effects of the Tax Act and the adjustment to the provisional amounts previously recorded in accordance with SEC Staff Accounting Bulletin No. 118.

Components of deferred tax assets and liabilities were as follows:

In thousands	December 31,	
	2018	2017
Deferred income tax assets:		
Accrued expenses and reserves	\$13,795	\$10,961
Warranty reserve	25,944	20,211
Deferred compensation/employee benefits	8,994	18,353
Pension and postretirement obligations	19,532	21,637
Inventory	16,769	19,620
Net operating loss carry forwards	85,051	65,671
Other	20,048	14,974
Gross deferred income tax assets	190,133	171,427
Valuation allowance	41,779	25,683
Total deferred income tax assets	148,354	145,744
Deferred income tax liabilities:		
Property, plant & equipment	35,440	37,015
Intangibles	287,419	288,141
Total deferred income tax liabilities	322,859	325,156
Net deferred income tax liability	\$(174,505)	\$(179,412)

A valuation allowance is provided when it is more likely than not that some portion or all of the deferred tax assets will not be realized. As of December 31, 2018, the valuation allowance for certain foreign deferred tax asset carryforwards was \$41.8 million primarily in China, France, the Netherlands, United Kingdom, and South Africa. Net operating loss carry-forwards in the amount of \$342.5 million expire in various periods from December 31, 2019 to December 31, 2038.

As of December 31, 2018, the liability for income taxes associated with unrecognized tax benefits was \$9.5 million, of which \$8.4 million, if recognized, would favorably affect the Company's effective income tax rate. As of December 31, 2017, the liability for income taxes associated with unrecognized tax benefits was \$6.9 million, of which \$4.4 million, if recognized, would favorably affect the Company's effective tax rate. A reconciliation of the beginning and ending amount of the liability for income taxes associated with unrecognized tax benefits follows:

In thousands	2018	2017	2016
Gross liability for unrecognized tax benefits at beginning of year	\$6,910	\$8,423	\$10,557
Gross increases - unrecognized tax benefits in prior periods	5,389	2,466	6
Gross decreases - audit settlement during year	—	(3,979)	—
Gross decreases - expiration of audit statute of limitations	(2,756)	—	(2,140)
Gross liability for unrecognized tax benefits at end of year	\$9,543	\$6,910	\$8,423

The Company includes interest and penalties related to unrecognized tax benefits in income tax expense. As of December 31, 2018, the total interest and penalties accrued was approximately \$0.9 million. As of December 31, 2017, the total interest and penalties accrued was approximately \$0.8 million.

With limited exception, the Company is no longer subject to examination by various U.S. and foreign taxing authorities for years before 2013. At this time, the Company believes that it is reasonably possible that unrecognized tax benefits of approximately \$4.1 million may change within the next 12 months due to the expiration of statutory review periods and current examinations.

13. EARNINGS PER SHARE

The computation of earnings per share from operations is as follows:

In thousands, except per share data	For the Year Ended		
	December 31,		
	2018	2017	2016
Numerator			
Numerator for basic and diluted earnings per common share - net income attributable to Wabtec shareholders	\$294,944	\$262,261	\$304,887
Less: dividends declared - common shares and non-vested restricted stock	(46,277)	(42,218)	(32,430)
Undistributed earnings	248,667	220,043	272,457
Percentage allocated to common shareholders (1)	99.7%	99.7%	99.7%
	247,921	219,383	271,640
Add: dividends declared - common shares	46,173	42,092	32,333
Numerator for basic and diluted earnings per common share	\$294,094	\$261,475	\$303,973
Denominator			
Denominator for basic earnings per common share - weighted average shares	95,994	95,453	90,359
Effect of dilutive securities:			
Assumed conversion of dilutive stock-based compensation plans	470	672	782
Denominator for diluted earnings per common share - adjusted weighted average shares and assumed conversion	96,464	96,125	91,141
Net income per common share attributable to Wabtec shareholders			
Basic	\$3.06	\$2.74	\$3.37
Diluted	\$3.05	\$2.72	\$3.34
(1) Basic weighted-average common shares outstanding	95,994	95,453	90,359
Basic weighted-average common shares outstanding and non-vested restricted stock expected to vest	96,281	95,740	90,627
Percentage allocated to common shareholders	99.7%	99.7%	99.7%

Options to purchase approximately 135,000, 24,000, and 20,000 shares of Common Stock were outstanding in 2018, 2017 and 2016, respectively, but were not included in the computation of diluted earnings because their impact would have been antidilutive.

14. STOCK-BASED COMPENSATION PLANS

85

As of December 31, 2018, the Company maintains employee stock-based compensation plans for stock options, restricted stock, and incentive stock units as governed by the 2011 Stock Incentive Compensation Plan, as amended and restated (the “2011 Plan”) and the 2000 Stock Incentive Plan, as amended (the “2000 Plan”). The 2011 Plan has a term through May 10, 2027 and as of December 31, 2018 the number of shares available for future grants under the 2011 Plan was 2,800,836 shares, which includes remaining shares to grant under the 2000 Plan. The amendment and restatement of the 2011 Plan was approved by stockholders of Wabtec on May 10, 2017. The Company also maintains a 1995 Non-Employee Directors’ Fee and Stock Option Plan as amended and restated (“the Directors Plan”). The amendment and restatement of the Directors Plan was approved by stockholders of Wabtec on May 10, 2017. The Directors Plan, as amended, authorizes a total of 1,000,000 shares of Common Stock to be issued. Under the Directors Plan options issued become exercisable over a three-year vesting period and expire ten years from the date of grant and restricted stock issued under the plan vests one year from the date of grant. As compensation for directors’ fees for the years ended December 31, 2018, 2017 and 2016, the Company issued a total of 12,960, 16,500 and 16,972 shares of restricted stock to non-employee directors. The total number of shares issued under the plan as of December 31, 2018 was 894,152 shares.

Stock-based compensation expense for all of the plans was \$25.3 million, \$21.3 million and \$20.8 million for the years ended December 31, 2018, 2017 and 2016, respectively. The Company recognized associated tax benefits related to the stock-based compensation plans of \$6.3 million, \$8.9 million and \$14.9 million for the respective periods. Included in the stock-based compensation expense for 2018 above is \$1.6 million of expense related to stock options, \$7.1 million related to non-vested restricted stock, \$5.1 million related to restricted stock units, \$10.3 million related to incentive stock units and \$1.2 million related to units issued for Directors’ fees. At December 31, 2018, unamortized compensation expense related to those stock options, non-vested restricted shares and incentive stock units expected to vest totaled \$27.1 million and will be recognized over a weighted period of 1.3 years.

Stock Options Stock options are granted to eligible employees and directors at the fair market value, which is the average of the high and low Wabtec stock price on the date of grant. Under the 2011 Plan and the 2000 Plan, options become exercisable over a four year vesting period and expire 10 years from the date of grant.

The following table summarizes the Company's stock option activity and related information for the 2011 Plan, the 2000 Plan and Directors Plan for the years ended December 31:

	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life	Aggregate Intrinsic value (in thousands)
Outstanding at December 31, 2015	1,097,323	\$ 32.70	4.8	\$ 42,154
Granted	94,115	61.39		2,035
Exercised	(83,790)	25.58		(4,813)
Canceled	(8,825)	71.47		(102)
Outstanding at December 31, 2016	1,098,823	\$ 35.39	4.3	\$ 52,332
Granted	65,522	86.91		—
Exercised	(166,838)	21.37		(10,020)
Canceled	(13,995)	76.89		(64)
Outstanding at December 31, 2017	983,512	\$ 32.52	4.0	\$ 40,137
Granted	82,580	77.54		—
Exercised	(582,303)	28.29		(24,433)
Canceled	(17,112)	69.76		(8)
Outstanding at December 31, 2018	466,677	\$ 61.04	5.7	\$ 4,298
Exercisable at December 31, 2018	283,169	\$ 50.60	4.6	\$ 5,564

Options outstanding at December 31, 2018 were as follows:

	Number of Options	Weighted Average Exercise Price of Options	Weighted Average Remaining Contractual Life	Number of Options Currently Exercisable	Weighted Average Exercise Price of Options Currently Exercisable
Range of exercise prices	Outstanding	Outstanding	Life	Exercisable	Exercisable
Under \$35.00	71,765	\$ 27.84	2.0	71,765	\$ 27.84
35.00 - 50.00	107,034	41.36	3.6	107,034	41.36
50.00 - 65.00	65,199	61.33	7.1	24,615	61.33
65.00 - 80.00	98,981	72.21	7.6	38,187	72.85
Over 80.00	123,698	88.25	7.5	41,568	86.90
	466,677	\$ 61.04		283,169	\$ 50.60

The fair value of each option grant is estimated on the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions:

	For the year ended December 31,					
	2018	%	2017	%	2016	%
Dividend yield	0.31	%	0.23	%	0.26	%
Risk-free interest rate	2.8	%	2.2	%	1.5	%
Stock price volatility	23.9	%	23.4	%	26.9	%
Expected life (years)	5.0		5.0		5.0	
Weighted average fair value of options granted during the year	\$20.59		\$20.69		\$14.96	

The dividend yield is based on the Company's dividend rate and the current market price of the underlying common stock at the date of grant. Expected life in years is determined from historical stock option exercise data. Expected

volatility is based on the historical volatility of the Company's stock. The risk-free interest rate is based on the 7 years U.S. Treasury bond rates for the expected life of the option.

Restricted Stock and Incentive Stock Beginning in 2006 the Company adopted a restricted stock program. As provided for under the 2011 and 2000 Plans, eligible employees are granted restricted stock that generally vests over four years from the date of grant. Under the Directors Plan, restricted stock units vest one year from the date of grant. In addition, the Company has issued incentive stock units to eligible employees that vest upon attainment of certain cumulative three-year performance goals. Based on the Company's performance for each three year period then ended, the incentive stock units can vest and be awarded ranging from 0% to 200% of the initial incentive stock units granted. The incentive stock units included in the table below represent the number of shares that are expected to vest based on the

87

Company's estimate for meeting those established performance targets. As of December 31, 2018, the Company estimates that it will achieve 81%, 97% and 107% for the incentive stock units expected to vest based on performance for the three year periods ending December 31, 2018, 2019, and 2020, respectively, and has recorded incentive compensation expense accordingly. If estimates of the number of these stock units expected to vest changes in a future accounting period, cumulative compensation expense could increase or decrease and will be recognized in the current period for the elapsed portion of the vesting period and would change future expense for the remaining vesting period. Compensation expense for the non-vested restricted stock and incentive stock units is based on the closing price of the Company's common stock on the date of grant and recognized over the applicable vesting period.

The following table summarizes the restricted stock activity and related information for the 2011 Plan, the 2000 Plan, and Directors Plan, and incentive stock units activity and related information for the 2011 Plan and the 2000 Plan with related information for the years ended December 31:

	Restricted Stock and Units	Incentive Stock Awards	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2015	356,885	541,638	\$ 65.89
Granted	212,600	167,850	66.03
Vested	(159,975)	(236,591)	51.80
Adjustment for incentive stock awards expected to vest	—	(38,164)	74.42
Canceled	(13,215)	(9,983)	71.84
Outstanding at December 31, 2016	396,295	424,750	\$ 72.18
Granted	153,516	157,025	86.66
Vested	(137,088)	(153,271)	70.34
Adjustment for incentive stock awards expected to vest	—	(87,592)	73.69
Canceled	(13,723)	(13,579)	76.61
Outstanding at December 31, 2017	399,000	327,333	\$ 78.76
Granted	224,060	175,100	73.76
Vested	(148,644)	(93,312)	81.55
Adjustment for incentive stock awards expected to vest	—	32,996	74.62
Canceled	(29,327)	(26,875)	78.60
Outstanding at December 31, 2018	445,089	415,242	\$ 75.51

15. OTHER COMPREHENSIVE LOSS

The components of accumulated other comprehensive loss were:

In thousands	December 31,	
	2018	2017
Foreign currency translation gain (loss)	\$(202,204)	\$5,063
Unrealized gain (loss) on interest rate swap contracts, net of tax of \$16 and \$1,338	(53)	4,015
Unrealized loss on pension and post-retirement benefit plans, net of tax of \$23,049 and \$19,532	(54,326)	(54,070)
Total accumulated other comprehensive loss	\$(256,583)	\$(44,992)

The changes in accumulated other comprehensive loss by component, net of tax, for the year-ended December 31, 2018 are as follows:

Foreign currency	Derivative	Pension and post
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In thousands	translation	contracts	retirement benefits plans	Total
Balance at December 31, 2017	\$5,063	\$ 4,015	\$(54,070)	\$(44,992)
Other comprehensive income before reclassifications	(207,267)	(7,803)	(2,319)	(217,389)
Amounts reclassified from accumulated other comprehensive income	—	3,735	2,063	5,798
Net current period other comprehensive income	(207,267)	(4,068)	(256)	(211,591)
Balance at December 31, 2018	\$(202,204)	\$ (53)	\$(54,326)	\$(256,583)

Reclassifications out of accumulated other comprehensive loss for the year-ended December 31, 2018 are as follows:

In thousands	Amount reclassified from accumulated other comprehensive income	Affected line item in the Condensed Consolidated Statements of Income
Amortization of defined pension and post retirement items		
Amortization of initial net obligation and prior service cost	\$ (1,501)	Other income, net
Amortization of net loss (gain)	4,327	Other income, net
	2,826	Other income, net
	(763)	Income tax expense
	\$ 2,063	Net income
Derivative contracts		
Realized loss on derivative contracts	4,915	Interest expense, net
	(1,180)	Income tax expense
	\$ 3,735	Net income

The changes in accumulated other comprehensive loss by component, net of tax, for the year-ended December 31, 2017 are as follows:

In thousands	Foreign currency translation	Derivative contracts	Pension and post retirement benefits plans	Total
Balance at December 31, 2016	\$(321,033)	\$(2,957)	\$(55,615)	\$(379,605)
Other comprehensive income before reclassifications	326,096	6,712	(1,017)	331,791
Amounts reclassified from accumulated other comprehensive income	—	260	2,562	2,822
Net current period other comprehensive income	326,096	6,972	1,545	334,613
Balance at December 31, 2017	\$5,063	\$ 4,015	\$(54,070)	\$(44,992)

Reclassifications out of accumulated other comprehensive loss for the year-ended December 31, 2017 are as follows:

Amount reclassified from	Affected line item in the
-----------------------------	------------------------------

In thousands	accumulated other comprehensive income	Condensed Consolidated Statements of Income
Amortization of defined pension and post retirement items		
Amortization of initial net obligation and prior service cost	\$ (1,496)	Other income, net
Amortization of net loss (gain)	5,037	Other income, net
	3,541	Other income, net
	(979)	Income tax expense
	\$ 2,562	Net income
Derivative contracts		
Realized loss on derivative contracts	400	Interest expense, net
	(140)	Income tax expense
	\$ 260	Net income

16. OPERATING LEASES

The Company leases office and manufacturing facilities under operating leases with terms ranging from one to 15 years, excluding renewal options.

Total net rental expense charged to operations in 2018, 2017, and 2016 was \$40.1 million, \$34.6 million and \$27.2 million, respectively. The amounts above are shown net of sublease rentals which were immaterial for the years 2018, 2017 and 2016, respectively.

Future minimum rental payments under operating leases with remaining non-cancelable terms in excess of one year are as follows:

In thousands	Real		Total
	Estate	Equipment	
2019	\$31,428	\$ 5,001	\$36,429
2020	28,132	2,636	30,768
2021	22,897	1,752	24,649
2022	18,020	825	18,845
2023	16,267	391	16,658
2024 and after	63,061	—	63,061

17. WARRANTIES

The following table reconciles the changes in the Company's product warranty reserve as follows:

In thousands	2018	2017
Balance at beginning of year	\$153,063	\$138,992
Warranty expense	57,988	50,385
Acquisitions	3,135	806
Warranty claim payments	(54,111)	(48,548)
Foreign currency impact	(6,373)	11,428
Balance at end of year	\$153,702	\$153,063

18. PREFERRED STOCK

The Company's authorized capital stock includes 1,000,000 shares of preferred stock. The Board of Directors has the authority to issue the preferred stock and to fix the designations, powers, preferences and rights of the shares of each such class or series, including dividend rates, conversion rights, voting rights, terms of redemption and liquidation preferences, without any further vote or action by the Company's shareholders. The rights and preferences of the preferred stock would be superior to those of the common stock. At December 31, 2018 and 2017 there was no preferred stock issued or outstanding.

19. DERIVATIVE FINANCIAL INSTRUMENTS AND HEDGING

Foreign Currency Hedging The Company uses forward contracts to mitigate its foreign currency exchange rate exposure due to forecasted sales of finished goods and future settlement of foreign currency denominated assets and liabilities. Derivatives used to hedge forecasted transactions and specific cash flows associated with foreign currency denominated financial assets and liabilities that meet the criteria for hedge accounting are designated as cash flow hedges. The effective portion of gains and losses is deferred as a component of accumulated other comprehensive income and is recognized in earnings at the time the hedged item affects earnings, in the same line item as the underlying hedged item. The contracts are scheduled to mature within two years. For the years ended December 31, 2018, 2017 and 2016, the amounts reclassified into income were not material.

Other Activities The Company enters into certain derivative contracts in accordance with its risk management strategy that do not meet the criteria for hedge accounting but which have the impact of largely mitigating foreign currency exposure. These foreign exchange contracts are accounted for on a full mark to market basis through earnings, with gains and losses recorded as a component of other expense, net. The net unrealized gain related to these contracts was \$2.9 million and \$2.1 million for the years ended December 31, 2018 and 2017, respectively. The net unrealized gain

related to these contracts for the year ended December 31, 2016 was not material. These contracts are scheduled to mature within one year.

The following table summarizes the gross notional amounts and fair values of the designated and non-designated hedges discussed in the above sections as of December 31, 2018:

In millions	Designated	Non-Designated	Total
Gross notional amount	\$ 863.0	\$ 834.0	\$1,697.0

Fair Value:

Other current assets	\$ —	\$ 1.3	\$1.3
Other current liabilities	(2.3)	—	(2.3)
Total	\$ (2.3)	\$ 1.3	\$(1.0)

The following table summarizes the gross notional amounts and fair values of the designated and non-designated hedges discussed in the above sections as of December 31, 2017:

In millions	Designated	Non-Designated	Total
Gross notional amount	\$ 805.1	\$ 379.7	\$1,184.8

Fair Value:

Other current assets	3.5	2.1	\$5.6
Other current liabilities	—	—	\$—
Total	\$ 3.5	\$ 2.1	\$5.6

Interest Rate Hedging The Company used interest rate swaps to manage interest rate exposures. The Company is exposed to interest rate volatility with regard to existing floating rate debt. Primary exposure includes the London Interbank Offered Rates (LIBOR). Derivatives used to hedge risk associated with changes in the fair value of certain variable-rate debt are primarily designated as fair value hedges. Consequently, changes in the fair value of these derivatives, along with changes in the fair value of debt obligations are recognized in current period earnings. Refer to footnote 20 for further information on interest rate swaps.

20. FAIR VALUE MEASUREMENT AND FAIR VALUE OF FINANCIAL INSTRUMENTS

ASC 820 "Fair Value Measurements and Disclosures" defines fair value, establishes a framework for measuring fair value and explains the related disclosure requirements. ASC 820 indicates, among other things, that a fair value measurement assumes that the transaction to sell an asset or transfer a liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability and defines fair value based upon an exit price model.

Valuation Hierarchy. ASC 820 establishes a valuation hierarchy for disclosure of the inputs to valuation used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument. Level 3 inputs are unobservable inputs based on the Company's assumptions used to measure assets and liabilities at fair value. A financial asset or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following table provides the liabilities carried at fair value measured on a recurring basis as of December 31, 2017, which are included in other current liabilities on the Consolidated Balance sheet:

Total Carrying Value at December 31,	Fair Value Measurements at December 31, 2017 Using	
	Quoted Prices in Active Markets for	Significant Unobservable Inputs
	Significant	Significant
	Other	Unobservable
	in Observable	Inputs
	Active	Inputs
	Markets	
	for	

In thousands	2017	Identical Assets	
		(Level 1)	(Level 2) (Level 3)
Interest rate swap agreements	1,163	— 1,163	—
Total	\$ 1,163	\$—\$ 1,163	\$ —

To reduce the impact of interest rate changes on a portion of its variable-rate debt, the Company entered into interest rate swaps which effectively converted a portion of the debt from variable to fixed-rate borrowings during the term of the swap

contracts. For certain derivative contracts whose fair values are based upon trades in liquid markets, such as interest rate swaps, valuation model inputs can generally be verified and valuation techniques do not involve significant management judgment. The fair values of such financial instruments are generally classified within Level 2 of the fair value hierarchy.

As a result of our global operating activities the Company is exposed to market risks from changes in foreign currency exchange rates, which may adversely affect our operating results and financial position. When deemed appropriate, the Company minimizes these risks through entering into foreign currency forward contracts. The foreign currency forward contracts are valued using broker quotations, or market transactions in either the listed or over-the counter markets. As such, these derivative instruments are classified within level 2.

The Company's cash and cash equivalents are highly liquid investments purchased with an original maturity of three months or less and are considered Level 1 on the fair value valuation hierarchy. The fair value of cash and cash equivalents approximated the carrying value at December 31, 2018 and December 31, 2017. The Company's defined benefit pension plan assets consist primarily of equity security funds, debt security funds and temporary cash and cash equivalent investments. These investments are comprised of a number of investment funds that invest in a diverse portfolio of assets including equity securities, corporate and governmental bonds, and money markets. Trusts are valued at the net asset value ("NAV") as determined by their custodian. NAV represents the accumulation of the unadjusted quoted close prices on the reporting date for the underlying investments divided by the total shares outstanding at the reporting dates. The 2013 and 2016 Notes are considered Level 2 based on the fair value valuation hierarchy.

The estimated fair values and related carrying values of the Company's financial instruments are as follows:

In thousands	December 31, 2018		December 31, 2017	
	Carry Value	Fair Value	Carry Value	Fair Value
Interest rate swap agreements	\$ —	\$ —	—\$1,163	\$ 1,163
4.375% Senior Notes, due 2023	248,823	254,218	248,567	262,033
3.45% Senior Notes, due 2026	748,282	675,075	747,655	741,113
Floating Rate Notes, due 2021	496,796	497,425	—	—
4.15% Senior Notes, due 2024	742,957	727,350	—	—
4.7% Senior Notes, due 2028	1,239,657	179,625	—	—

The fair value of the Company's interest rate swap agreements and all the Notes were based on dealer quotes and represent the estimated amount the Company would pay to the counterparty to terminate the agreement.

21. COMMITMENTS AND CONTINGENCIES

The Company is subject to a variety of environmental laws and regulations governing discharges to air and water, the handling, storage and disposal of hazardous or solid waste materials and the remediation of contamination associated with releases of hazardous substances. The Company believes its operations currently comply in all material respects with all of the various environmental laws and regulations applicable to our business; however, there can be no assurance that environmental requirements will not change in the future or that we will not incur significant costs to comply with such requirements.

Under terms of the purchase agreement and related documents for the 1990 Acquisition, Ingersoll Rand, the successor-in-interest to American Standard, Inc. ("Ingersoll"), has indemnified the Company for certain items including, among other things, certain environmental claims the Company asserted prior to 2000. If Ingersoll was unable to honor or meet these indemnifications, the Company would be responsible for such items. In the opinion of Management, Ingersoll currently has the ability to meet its indemnification obligations.

Claims have been filed against the Company and certain of its affiliates in various jurisdictions across the United States by persons alleging bodily injury as a result of exposure to asbestos-containing products. Most of these claims have been made against our wholly owned subsidiary, Railroad Friction Products Corporation ("RFPC"), and are based on a product sold by RFPC prior to the time that the Company acquired any interest in RFPC.

Most of these claims, including all of the RFPC claims, are submitted to insurance carriers for defense and indemnity or to non-affiliated companies that retain the liabilities for the asbestos-containing products at issue. We cannot, however, assure that all these claims will be fully covered by insurance or that the indemnitors or insurers will remain financially viable. Our ultimate legal and financial liability with respect to these claims, as is the case with other pending litigation, cannot be estimated.

It is management's belief that the potential range of loss for asbestos-related bodily injury cases is not reasonably determinable at present due to a variety of factors, including: (1) the asbestos case settlement history of the Company's wholly owned subsidiary, RFPC; (2) the unpredictable nature of personal injury litigation in general; and (3) the uncertainty of asbestos litigation in particular. Despite this uncertainty, and although the results of the Company's operations and cash flows for any given period could be adversely affected by asbestos-related lawsuits, Management believes that the final resolution of the Company's asbestos-related cases will not be material to the Company's overall financial position, results of operations and cash flows. In general, this belief is based upon: (1) Wabtec's and RFPC's history of settlements and dismissals of asbestos-related cases to date; (2) the inability of many plaintiffs to establish any exposure or causal relationship to RFPC's product; and (3) the inability of many plaintiffs to demonstrate any identifiable injury or compensable loss.

More specifically, as to RFPC, management's belief that any losses due to asbestos-related cases would not be material is also based on the fact that RFPC owns insurance which provides coverage for asbestos-related bodily injury claims. To date, RFPC's insurers have provided RFPC with defense and indemnity in these actions. The overall number of new claims being filed against RFPC has dropped significantly in recent years; however, these new claims, and all previously filed claims, may take a significant period of time to resolve. As to Wabtec and its divisions, Management's belief that asbestos-related cases will not have a material impact is also based on its position that it has no legal liability for asbestos-related bodily injury claims, and that the former owners of Wabtec's assets retained asbestos liabilities for the products at issue. To date, Wabtec has been able to successfully defend itself on this basis, including two arbitration decisions and a judicial opinion, all of which confirmed Wabtec's position that it did not assume any asbestos liabilities from the former owners of certain Wabtec assets. Although Wabtec has incurred defense and administrative costs in connection with asbestos bodily injury actions, these costs have not been material, and the Company has no information that would suggest these costs would become material in the foreseeable future.

On April 21, 2016, Siemens Industry, Inc. filed a lawsuit against the Company in federal district court in Delaware alleging that the Company has infringed seven patents owned by Siemens related to Positive Train Control (PTC) technology. On November 2, 2016, Siemens amended its complaint to add six additional patents they also claim are infringed by the Company's PTC Products or End of Train (EOT) Products (Siemens Patent Case). The Company has filed Answers, and asserted counterclaims, in response to Siemens' complaints. Additionally, after filings by the Company, the US Patent & Trademark Office's Patent Trial and Appeal Board (PTAB) has granted Inter-Parties Review (IPR) proceedings on ten (10) of the patents asserted by Siemens to contest their validity. Following pre-trial rulings that greatly reduced Siemens' alleged damages, a jury trial was held in federal district court in Delaware in January 2019 on eight patents, two of which were still subject to an IPR decision on validity from the PTAB. At the conclusion of the trial, the jury awarded Siemens damages of \$5.6 million related to PTC patents and \$1.1 million related to EOT patents; as of February 25, 2019, a final verdict has not yet been entered by the Court. Since the jury's verdict was issued, one of the PTC patents found to be infringed was held to be invalid by the PTAB, and a ruling on another of the PTC patents is still pending. Once a verdict is entered, the parties will file post-trial motions which could also potentially affect the verdict, and potential appeals could follow.

Wabtec's initial counterclaims in the Siemens Patent Case alleging that Siemens has violated three (3) of Wabtec's patents were severed from the Siemens Patent case and were re-filed by Wabtec in a separate case now pending in the federal district court in Delaware (Wabtec Patent Case); a trial date of April 13, 2020 has been set in this case.

On July 19, 2018, Siemens amended its pleadings in the Wabtec Patent Case to add new counterclaims alleging violations of federal antitrust and state trade practices laws related to Wabtec's PTC sales. On January 29, 2019, Wabtec's motion to sever the antitrust claims was granted; it is expected that Siemens will re-file the antitrust claims as a separate action (Siemens Antitrust Case).

Xorail, Inc., a wholly owned subsidiary of the Company ("Xorail"), has received notices from Denver Transit Constructors ("DTC") alleging breach of contract related to the operating of constant warning wireless crossings, and late delivery of the Train Management & Dispatch System ("TMDS") for the Denver Eagle P3 Project, which is owned by the Denver Regional Transit District ("RTD"). No damages have been asserted for the alleged late delivery of the TMDS, and no formal claim has been filed. Xorail is in the final stages of successfully implementing a recovery plan concerning the TMDS issues. With regard to the wireless crossing issue, as of September 8, 2017, DTC alleged that total damages were \$36.8 million through July 31, 2017 and are continuing to accumulate. The majority of the

damages stems from a delay in approval of the wireless crossing system by the Federal Railway Administration ("FRA") and the Public Utility Commission ("PUC"), resulting in the use of flaggers at all of the crossings pending approval of the wireless crossing system and certification of the crossings. DTC has alleged that the delay is due to Xorail's failure to achieve constant warning times for the crossings in accordance with the approval requirements imposed by the FRA and PUC. Xorail has denied DTC's assertions, stating that its system satisfied the contractual requirements. Xorail has worked with DTC to modify its system and implement the FRA's and PUC's previously undefined approval requirements; the FRA and PUC have both approved modified wireless crossing system, and as of August 2018, DTC completed the process of certifying the crossings and eliminating the use of flaggers. On September 21, 2018, DTC filed a complaint against RTD in Colorado state court for breach of contract related to non-payments and the costs for the

flaggers, asserting a change-in-law arising from the FRA/PUC's new certification requirements. The complaint generally supports Xorail's position and does not name or implicate Xorail. DTC has not updated its notices against Xorail nor has any formal claim been filed against Xorail by DTC.

On April 3, 2018, the United States Department of Justice entered into a proposed consent decree resolving allegations that the Company and Knorr-Bremse AG had maintained unlawful agreements not to compete for each other's employees. The allegations also related to Faiveley Transport before it was acquired by the Company in November 2016. The proposed consent decree is pending review and approval by the U.S. District Court for the District of Columbia. No monetary fines or penalties have been imposed on the Company. The Company elected to settle this matter with the Department of Justice to avoid the cost and distraction of litigation. Putative class action lawsuits were filed in several different federal district courts naming the Company and Knorr as defendants in connection with the allegations contained in the proposed consent decree. The lawsuits seek unspecified damages on behalf of employees of the Company (including Faiveley Transport) and Knorr allegedly caused by the defendants' actions. A federal Multi-District Litigation (MDL) Panel decided to consolidate the cases in the Western District of Pennsylvania, and on October 12, 2018, a consolidated class action complaint was filed in the Western District of PA with five named plaintiffs, three of whom were Company employees. The litigation is in its very early stages and the Company does not believe that it has diminished competition for talent in the marketplace and intends to contest these claims vigorously. The Company has filed a motion to dismiss, which is pending.

From time to time the Company is involved in litigation relating to claims arising out of its operations in the ordinary course of business. As of the date hereof, the Company is involved in no litigation that the Company believes will have a material adverse effect on its financial condition, results of operations or liquidity.

22. SEGMENT INFORMATION

Wabtec has two reportable segments—the Freight Segment and the Transit Segment. The key factors used to identify these reportable segments are the organization and alignment of the Company's internal operations, the nature of the products and services, and customer type. The business segments are:

Freight Segment primarily manufactures and services components for new and existing freight cars and locomotives, builds new switcher locomotives, rebuilds freight locomotives, supplies railway electronics, positive train control equipment, signal design and engineering services, and provides related heat exchange and cooling systems. Customers include large, publicly traded railroads, leasing companies, manufacturers of original equipment such as locomotives and freight cars, and utilities.

Transit Segment primarily manufactures and services components for new and existing passenger transit vehicles, typically regional trains, high speed trains, subway cars, light-rail vehicles and buses, builds new commuter locomotives, refurbishes subway cars, provides heating, ventilation, and air conditioning equipment, and doors for buses and subways. Customers include public transit authorities and municipalities, leasing companies, and manufacturers of subway cars and buses around the world.

The Company evaluates its business segments' operating results based on income from operations. Intersegment sales are accounted for at prices that are generally established by reference to similar transactions with unaffiliated customers. Corporate activities include general corporate expenses, elimination of intersegment transactions, interest income and expense and other unallocated charges. Since certain administrative and other operating expenses and other items have not been allocated to business segments, the results in the following tables are not necessarily a measure computed in accordance with generally accepted accounting principles and may not be comparable to other companies.

Segment financial information for 2018 is as follows:

In thousands	Freight Segment	Transit Segment	Corporate Activities and Elimination	Total
Sales to external customers	\$ 1,564,297	\$ 2,799,250	\$—	\$ 4,363,547
Intersegment sales/(elimination)	54,228	17,583	(71,811)	—
Total sales	\$ 1,618,525	\$ 2,816,833	\$(71,811)	\$ 4,363,547
Income (loss) from operations	\$ 304,832	\$ 227,939	\$(59,334)	\$ 473,437
Interest expense and other, net	—	—	(105,855)	(105,855)
Income (loss) from operations before income taxes	\$ 304,832	\$ 227,939	\$(165,189)	\$ 367,582
Depreciation and amortization	\$ 39,979	\$ 64,287	\$ 5,031	\$ 109,297
Capital expenditures	26,568	59,603	7,134	93,305
Segment assets	3,774,689	9,087,026	(4,212,481)	8,649,234

Segment financial information for 2017 is as follows:

In thousands	Freight Segment	Transit Segment	Corporate Activities and Elimination	Total
Sales to external customers	\$ 1,396,588	\$ 2,485,168	\$—	\$ 3,881,756
Intersegment sales/(elimination)	37,630	21,548	(59,178)	\$—
Total sales	\$ 1,434,218	\$ 2,506,716	\$(59,178)	\$ 3,881,756
Income (loss) from operations	\$ 264,276	\$ 188,219	\$(31,416)	\$ 421,079
Interest expense and other, net	—	—	(69,016)	(69,016)
Income (loss) from operations before income taxes	\$ 264,276	\$ 188,219	\$(100,432)	\$ 352,063
Depreciation and amortization	\$ 43,721	\$ 57,441	\$ 2,086	\$ 103,248
Capital expenditures	33,921	50,762	4,783	89,466
Segment assets	3,504,289	7,562,122	(4,486,431)	6,579,980

Segment financial information for 2016 is as follows:

In thousands	Freight Segment	Transit Segment	Corporate Activities and Elimination	Total
Sales to external customers	\$ 1,543,098	\$ 1,388,090	\$—	\$ 2,931,188
Intersegment sales/(elimination)	39,519	9,393	(48,912)	—
Total sales	\$ 1,582,617	\$ 1,397,483	\$(48,912)	\$ 2,931,188
Income (loss) from operations	\$ 343,578	\$ 170,569	\$(57,540)	\$ 456,607
Interest expense and other, net	—	—	(43,770)	(43,770)
Income (loss) from operations before income taxes	\$ 343,578	\$ 170,569	\$(101,310)	\$ 412,837
Depreciation and amortization	\$ 36,519	\$ 31,545	\$ 1,731	\$ 69,795
Capital expenditures	22,726	20,987	6,503	50,216
Segment assets	2,949,668	6,720,302	(3,088,952)	6,581,018

The following geographic area data as of and for the years ended December 31, 2018, 2017 and 2016, respectively, includes net sales based on product shipment destination and long-lived assets, which consist of plant, property and equipment, net of depreciation, resident in their respective countries:

In thousands	Net Sales			Long-Lived Assets		
	2018	2017	2016	2018	2017	2016
United States	\$1,460,278	\$1,323,781	\$1,362,255	\$204,279	\$211,608	\$205,895
United Kingdom	395,767	356,493	322,563	54,848	57,668	54,215
Germany	314,703	208,817	98,364	75,498	71,709	57,902
Canada	278,979	279,013	206,258	5,271	5,822	5,156
France	247,804	237,454	66,287	56,651	57,849	33,636
Mexico	200,642	160,029	183,583	9,184	9,117	8,766
Italy	189,839	142,037	45,771	29,806	30,329	27,253
India	178,491	137,837	24,161	12,782	12,519	1,271
Australia	173,539	136,127	82,099	9,587	10,483	8,039
China	170,297	178,137	106,357	33,438	36,388	42,672
Brazil	67,572	69,378	51,493	13,490	13,184	13,227
Other international	685,636	652,653	381,997	58,903	57,296	60,344
Total	\$4,363,547	\$3,881,756	\$2,931,188	\$563,737	\$573,972	\$518,376

Export sales from the Company's United States operations were \$512.5 million, \$448.0 million and \$470.5 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Sales by product are as follows:

In thousands	2018	2017	2016
Specialty Products & Electronics	\$1,631,966	\$1,350,727	\$1,374,580
Brake Products	885,464	749,959	588,081
Remanufacturing, Overhaul & Build	537,122	522,275	559,284
Transit Products	1,111,549	1,112,340	276,124
Other	197,446	146,455	133,119
Total sales	\$4,363,547	\$3,881,756	\$2,931,188

23. GUARANTOR SUBSIDIARIES FINANCIAL INFORMATION

The obligations under the Company's 2016 Notes, 2013 Notes and Revolving Credit Facility and Term Loan are fully and unconditionally guaranteed by all U.S. subsidiaries as guarantors. Each guarantor is 100% owned by the parent company. In accordance with positions established by the Securities and Exchange Commission, the following shows separate financial information with respect to the parent, the guarantor subsidiaries and the non-guarantor subsidiaries. The principal elimination entries eliminate investment in subsidiaries and certain intercompany balances and transactions.

Balance Sheet for December 31, 2018:

In thousands	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Cash, cash equivalents, and restricted cash	\$ 1,782,682	\$(119)	\$ 559,791	\$—	\$ 2,342,354
Receivables, net	106,815	61,513	978,450	—	1,146,778
Inventories	149,622	69,116	626,148	—	844,886
Current assets - other	11,884	690	103,075	—	115,649
Total current assets	2,051,003	131,200	2,267,464	—	4,449,667
Property, plant and equipment	51,551	24,755	487,431	—	563,737
Goodwill	25,275	283,241	2,088,028	—	2,396,544
Investment in subsidiaries	6,707,979	4,022,107	—	(10,730,086)	—
Other intangibles, net	29,254	78,547	1,022,079	—	1,129,880
Other long term assets	8,775	149	100,482	—	109,406
Total assets	\$8,873,837	\$4,539,999	\$ 5,965,484	\$(10,730,086)	\$ 8,649,234
Current liabilities	\$264,630	\$91,004	\$ 1,291,056	\$—	\$ 1,646,690
Inter-company	1,947,504	(1,436,222)	(511,282)	—	—
Long-term debt	3,779,627	—	13,147	—	3,792,774
Long-term liabilities - other	16,945	48,714	275,036	—	340,695
Total liabilities	6,008,706	(1,296,504)	1,067,957	—	5,780,159
Shareholders' equity	2,865,131	5,836,503	4,893,583	(10,730,086)	2,865,131
Non-controlling interest	—	—	3,944	—	3,944
Total shareholders' equity	\$2,865,131	\$5,836,503	\$ 4,897,527	\$(10,730,086)	\$ 2,869,075
Total Liabilities and Shareholders' Equity	\$8,873,837	\$4,539,999	\$ 5,965,484	\$(10,730,086)	\$ 8,649,234

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Balance Sheet for December 31, 2017:

In thousands	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Cash and cash equivalents	\$933	\$625	\$ 231,843	\$—	\$ 233,401
Receivables, net	77,046	59,166	1,030,575	—	1,166,787
Inventories	120,937	46,626	575,071	—	742,634
Current assets - other	1,142	563	120,586	—	122,291
Total current assets	200,058	106,980	1,958,075	—	2,265,113
Property, plant and equipment	52,532	26,492	494,948	—	573,972
Goodwill	25,274	283,242	2,151,587	—	2,460,103
Investment in subsidiaries	6,517,205	2,440,665	—	(8,957,870)	—
Other intangibles, net	30,575	81,037	1,092,820	—	1,204,432
Other long term assets	17,414	(23,892)	82,838	—	76,360
Total assets	\$6,843,058	\$2,914,524	\$ 5,780,268	\$(8,957,870)	\$ 6,579,980
Current liabilities	\$196,827	\$77,284	\$ 1,299,219	\$—	\$ 1,573,330
Inter-company	2,121,546	(1,307,410)	(814,136)	—	—
Long-term debt	1,661,771	14	161,518	—	1,823,303
Long-term liabilities - other	54,046	20,594	280,175	—	354,815
Total liabilities	4,034,190	(1,209,518)	926,776	—	3,751,448
Shareholders' equity	2,808,868	4,124,042	4,833,828	(8,957,870)	2,808,868
Non-controlling interest	—	—	19,664	—	19,664
Total shareholders' equity	\$2,808,868	\$4,124,042	\$ 4,853,492	\$(8,957,870)	\$ 2,828,532
Total Liabilities and Shareholders' Equity	\$6,843,058	\$2,914,524	\$ 5,780,268	\$(8,957,870)	\$ 6,579,980

Income Statement for the Year Ended December 31, 2018:

In thousands	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net Sales	\$671,035	\$483,058	\$ 3,442,229	\$(232,775)	\$4,363,547
Cost of sales	(495,090)	(304,286)	(2,462,536)	132,250	(3,129,662)
Gross profit (loss)	175,945	178,772	979,693	(100,525)	1,233,885
Total operating expenses	(172,978)	(57,274)	(530,196)	—	(760,448)
Income (loss) from operations	2,967	121,498	449,497	(100,525)	473,437
Interest (expense) income, net	(110,801)	12,794	(14,228)	—	(112,235)
Other income (expense), net	13,452	20	(7,092)	—	6,380
Equity earnings (loss)	396,944	369,376	—	(766,320)	—
Pretax income (loss)	302,562	503,688	428,177	(866,845)	367,582
Income tax expense	(7,618)	(3,299)	(64,962)	—	(75,879)
Net income (loss)	294,944	500,389	363,215	(866,845)	291,703
Less: Net income attributable to noncontrolling interest	—	—	3,241	—	3,241
Net income (loss) attributable to Wabtec shareholders	\$294,944	\$500,389	\$ 366,456	\$(866,845)	\$294,944
Comprehensive income (loss) attributable to Wabtec shareholders	\$295,774	\$500,389	\$ 154,035	\$(866,845)	\$83,353

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Income Statement for the Year Ended December 31, 2017:

In thousands	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net Sales	\$577,397	\$398,220	\$3,035,464	\$(129,325)	\$3,881,756
Cost of sales	(440,911)	(255,792)	(2,218,460)	98,720	(2,816,443)
Gross profit (loss)	136,486	142,428	817,004	(30,605)	1,065,313
Total operating expenses	(114,199)	(50,902)	(479,133)	—	(644,234)
Income (loss) from operations	22,287	91,526	337,871	(30,605)	421,079
Interest (expense) income, net	(76,823)	10,916	(11,977)	—	(77,884)
Other income (expense), net	10,020	274	(1,426)	—	8,868
Equity earnings (loss)	416,068	317,614	—	(733,682)	—
Pretax income (loss)	371,552	420,330	324,468	(764,287)	352,063
Income tax (expense) income	(109,294)	18,762	759	—	(89,773)
Net income (loss)	262,258	439,092	325,227	(764,287)	262,290
Less: Net income attributable to noncontrolling interest	—	—	(29)	—	(29)
Net income (loss) attributable to Wabtec shareholders	\$262,258	\$439,092	\$325,198	\$(764,287)	\$262,261
Comprehensive income (loss) attributable to Wabtec shareholders	\$263,907	\$439,092	\$658,162	\$(764,287)	\$596,874

Income Statement for the Year Ended December 31, 2016:

In thousands	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net Sales	\$641,809	\$435,864	\$1,995,465	\$(141,950)	\$2,931,188
Cost of sales	(473,700)	(280,973)	(1,350,401)	98,125	(2,006,949)
Gross (loss) profit	168,109	154,891	645,064	(43,825)	924,239
Total operating expenses	(142,817)	(50,361)	(274,454)	—	(467,632)
Income (loss) from operations	25,292	104,530	370,610	(43,825)	456,607
Interest (expense) income, net	(38,843)	9,294	(20,749)	—	(50,298)
Other income (expense), net	25,254	(1,689)	(17,037)	—	6,528
Equity earnings (loss)	322,650	292,184	—	(614,834)	—
Pretax income (loss)	334,353	404,319	332,824	(658,659)	412,837
Income tax expense	(29,466)	(52,308)	(17,659)	—	(99,433)
Net income (loss)	304,887	352,011	315,165	(658,659)	313,404
Less: Net income attributable to noncontrolling interest	—	—	(8,517)	—	(8,517)
Net income (loss) attributable to Wabtec shareholders	\$304,887	\$352,011	\$306,648	\$(658,659)	\$304,887
Comprehensive income (loss) attributable to Wabtec shareholders	\$305,180	\$352,011	\$203,469	\$(658,659)	\$202,001

Condensed Statement of Cash Flows for the year ended December 31, 2018:

In thousands	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net cash (used in) provided by operating activities	\$(87,122)	\$ 130,125	\$ 372,193	\$(100,525)	\$ 314,671
Net cash used in investing activities	(16,808)	(2,024)	(128,455)	—	(147,287)
Net cash provided by (used in) financing activities	1,885,679	(128,845)	120,752	100,525	1,978,111
Effect of changes in currency exchange rates	—	—	(36,542)	—	(36,542)
Increase (decrease) in cash	1,781,749	(744)	327,948	—	2,108,953
Cash and cash equivalents, beginning of year	933	625	231,843	—	233,401
Cash, cash equivalents, and restricted cash, end of year	\$1,782,682	\$(119)	\$ 559,791	\$—	\$ 2,342,354

Condensed Statement of Cash Flows for the year ended December 31, 2017:

In thousands	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net cash (used in) provided by operating activities	\$(49,231)	\$ 130,298	\$ 138,349	\$(30,605)	\$ 188,811
Net cash used in investing activities	(11,156)	(3,357)	(1,018,961)	—	(1,033,474)
Net cash provided by (used in) financing activities	58,798	(127,542)	(59,292)	30,605	(97,431)
Effect of changes in currency exchange rates	—	—	32,263	—	32,263
(Decrease) increase in cash	(1,589)	(601)	(907,641)	—	(909,831)
Cash, cash equivalents, and restricted cash, beginning of year	2,522	1,226	1,139,484	—	1,143,232
Cash and cash equivalents, end of year	\$933	\$625	\$ 231,843	\$—	\$ 233,401

Condensed Statement of Cash Flows for the year ended December 31, 2016:

In thousands	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net cash (used in) provided by operating activities	\$(44,611)	\$ 142,839	\$ 396,127	\$(43,825)	\$ 450,530
Net cash used in (provided by) investing activities	(829,783)	(2,653)	599,470	—	(232,966)
Net cash provided by (used in) financing activities	876,916	(147,586)	(250,184)	43,825	522,971
Effect of changes in currency exchange rates	—	—	(26,436)	—	(26,436)
Increase (decrease) in cash	2,522	(7,400)	718,977	—	714,099
Cash, cash equivalents, and restricted cash, beginning of year	—	8,626	420,507	—	429,133
Cash, cash equivalents, and restricted cash, end of year	\$2,522	\$ 1,226	\$ 1,139,484	\$—	\$ 1,143,232

24. OTHER INCOME, NET

The components of other income, net are as follows:

In thousands	For the year ended		
	December 31, 2018	2017	2016
Foreign currency loss	\$(5,745)	\$(6,618)	\$(4,001)
Equity income	1,931	2,579	409
Expected return on pension assets/amortization	9,047	9,834	9,491
Other miscellaneous (expense) income	1,147	3,073	629
Total other income, net	\$6,380	\$8,868	\$6,528

25. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

In thousands, except per share data	First Quarter	Second Quarter	Third Quarter	Fourth Quarter (1)
2018				
Net sales	\$1,056,177	\$1,111,680	\$1,077,814	\$1,117,876
Gross profit	310,881	323,967	302,012	297,025
Income from operations	131,279	123,523	125,179	93,456
Net income attributable to Wabtec shareholders	88,366	84,416	87,739	34,423
Basic earnings from operations per common share	\$0.92	\$0.88	\$0.91	\$0.36
Diluted earnings from operations per common share	\$0.92	\$0.87	\$0.91	\$0.36
2017				
Net sales	\$916,034	\$932,253	\$957,931	\$1,075,538
Gross profit	269,707	273,963	253,203	268,440
Income from operations	114,512	113,356	101,666	91,545
Net income attributable to Wabtec shareholders	73,889	72,025	67,399	48,948
Basic earnings from operations per common share	\$0.77	\$0.75	\$0.70	\$0.51
Diluted earnings from operations per common share	\$0.77	\$0.75	\$0.70	\$0.51

(1) Results from the fourth quarter of 2017 include project adjustments related to prior periods which decreased income from operations by approximately \$14.8 million. The effect of these project adjustments was not material.

The Company operates on a four-four-five week accounting quarter, and the quarters end on or about March 31, June 30 and September 30. The fiscal year ends on December 31.

SCHEDULE II
WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
VALUATION AND QUALIFYING ACCOUNTS

For each of the three years ended December 31

In thousands	Balance at beginning of period	Charged/ (credited) to expense	Charged/ (credited) to other accounts (1)	Deductions from reserves (2)	Balance at end of period
2018					
Allowance for doubtful accounts	\$ 12,342	\$ 9,458	\$ (360)	\$ 4,513	\$ 16,927
Valuation allowance-taxes	25,683	27,410	—	11,314	41,779
2017					
Allowance for doubtful accounts	\$ 7,340	\$ 2,632	\$ 4,979	\$ 2,609	\$ 12,342
Valuation allowance-taxes	21,418	4,265	—	—	25,683
2016					
Allowance for doubtful accounts	\$ 5,614	\$ 3,635	\$ —	\$ 1,909	\$ 7,340
Valuation allowance-taxes	12,623	3,405	5,390	—	21,418

(1) Reserves of acquired/(sold) companies; valuation allowances for state and foreign deferred tax assets; impact of fluctuations in foreign currency exchange rates.

(2) Actual disbursements and/or charges.

Item 16. FORM 10-K SUMMARY

Not applicable.

102

SIGNATURES

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

WESTINGHOUSE AIR BRAKE
TECHNOLOGIES CORPORATION

Date: February 27, 2019 By: /S/ RAYMOND T. BETLER

Raymond T. Betler,
President and Chief Executive Officer, and Director

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Company and in the capacities and on the dates indicated.

Signature and Title	Date
By /S/ ALBERT J. NEUPAVER Albert J. Neupaver, Executive Chairman of the Board	February 27, 2019
By /S/ RAYMOND T. BETLER Raymond T. Betler, President and Chief Executive Officer and Director (Principal Executive Officer)	February 27, 2019
By /S/ PATRICK D. DUGAN Patrick D. Dugan, Executive Vice President Finance and Chief Financial Officer (Principal Financial Officer)	February 27, 2019
By /S/ JOHN A. MASTALERZ John A. Mastalerz, Senior Vice President and Principal Accounting Officer	February 27, 2019
By /S/ WILLIAM E. KASSLING William E. Kassling, Lead Director	February 27, 2019
By /S/ PHILIPPE ALFROID Philippe Alfroid, Director	February 27, 2019
By /S/ ROBERT J. BROOKS	February 27, 2019

Robert J. Brooks,
Director

By /S/ ERWAN FAIVELEY

February 27, 2019

Erwan Faiveley,
Director

By /S/ EMILIO A. FERNANDEZ February 27, 2019
Emilio A. Fernandez,
Director

By /S/ LEE B. FOSTER, II February 27, 2019
Lee B. Foster, II,
Director

By /S/ LINDA S. HARTY February 27, 2019
Linda S. Harty,
Director

By /S/ BRIAN P. HEHIR February 27, 2019
Brian P. Hehir,
Director

By /S/ MICHAEL W. D. HOWELL February 27, 2019
Michael W. D. Howell,
Director