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

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

For the fiscal year ended December 31, 2019
OR

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

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 incorporation or organization)	**(IRS Employer Identification No.)**
30 Isabella Street **Pittsburgh, Pennsylvania 15212**	**(412) 825-1000**
(Address of principal executive offices, including zip code)	**(Registrant's telephone number)**

Securities registered pursuant to Section 12(b) of the Act:

Class	Trading Symbol	Name of Exchange on which registered
Common Stock, par value $.01 per share	WAB	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 every Interactive Data File required to be submitted 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 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," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	x	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 ☒.

The registrant estimates that as of June 30, 2019, the aggregate market value of the voting shares held by non-affiliates of the registrant was approximately $12.7 billion based on the closing price on the New York Stock Exchange for such stock.

As of February 14, 2020, 191,711,224 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 15, 2020 are incorporated by reference into Part III of this Form 10-K.

TABLE OF CONTENTS

	PART I	Page
Item 1.	Business	3
Item 1A.	Risk Factors	11
Item 1B.	Unresolved Staff Comments	18
Item 2.	Properties	19
Item 3.	Legal Proceedings	19
Item 4.	Mine Safety Disclosures	19
	Information About Our Executive Officers	20
	PART II	
Item 5.	Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	22
Item 6.	Selected Financial Data	24
Item 7.	Management’s Discussion and Analysis of Financial Condition and Results of Operations	25
Item 7A.	Quantitative and Qualitative Disclosures About Market Risk	45
Item 8.	Financial Statements and Supplementary Data	45
Item 9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	45
Item 9A.	Controls and Procedures	45
Item 9B.	Other Information	46
	PART III	
Item 10.	Directors, Executive Officers and Corporate Governance	46
Item 11.	Executive Compensation	46
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	46
Item 13.	Certain Relationships and Related Transactions, and Director Independence	46
Item 14.	Principal Accountant Fees and Services	46
	PART IV	
Item 15.	Exhibits and Financial Statement Schedules	47
Item 16.	Form 10-K Summary	99

PART I

Item 1. BUSINESS

General

Westinghouse Air Brake Technologies Corporation, doing business as Wabtec Corporation, is a Delaware corporation with headquarters at 30 Isabella Street in Pittsburgh, Pennsylvania. Our telephone number is 412-825-1000, and our website is located at *www.wabteccorp.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.

Throughout the years, the Company has made a number of strategic acquisitions leading the Company to where it is today. These have primarily included:

- the 1999 merger with MotivePower Industries, Inc. whereby the Company adopted its current name of Westinghouse Air Brake Technologies Corporation, or Wabtec;
- the 2017 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. Based in France, the Faiveley Transport business has roots to 1919 and made Wabtec a leader in manufacturing pantographs, automatic door mechanisms, air conditioning systems, railway braking systems and couplers; and
- the 2019 merger with GE Transportation, a business unit of General Electric Company. This brought a global technology leader and supplier of locomotives, equipment, services and digital solutions to the rail, mining, marine, stationary power and drilling industries into Wabtec.

As a result of the aforementioned acquisitions, as well as other smaller acquisitions, and organic growth, Wabtec is now one of the world’s largest providers of locomotives, value-added, technology-based equipment, systems and services for the global freight rail and passenger transit industries with over 27,500 employees and operations in over 50 countries. 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 efficiency, and reduce maintenance costs for customers, can be found on a large percentage of locomotives, freight cars, passenger transit cars and buses around the world. In 2019, the Company had net sales of approximately $8.2 billion and net income attributable to our shareholders of about $327 million. In 2019, net sales of aftermarket parts and services represented about 55% of total net sales, while net sales to customers outside of the U.S. accounted for about 60% of total net sales.

Through both internal growth as well as acquisitions, Wabtec has positioned itself with the following strategic benefits:

- *Increased diversity of revenues by product, geography and market.* Comprehensive product offerings spanning the freight rail and passenger transit industries, as well as products in the bus, mining and marine, and discrete industrial markets help Wabtec to balance the cyclical nature of the global rail business.
- *Significant Operating Synergies and Improved Financial Profile*. The consummation of the GE Transportation transaction is leading to operating synergies across all of Wabtec. As a result, we expect to generate approximately $250 million in annual run-rate operating synergies, driven by cost and revenue opportunities, before 2022. This 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.
- *Increased technical and engineering expertise.* Particularly with the onboarding of Faiveley Transport and GE Transportation, Wabtec's technical capabilities and product development efforts are strengthened.
- *Increased Scale and Diversification of Wabtec’s Freight Product Portfolio*. Wabtec is now one of the world’s largest providers of locomotives, freight car components, technology-enabled equipment, systems and services for the locomotive and freight rail industries.
- *Broadened product line and international presence in the transit market.* Wabtec now offers a comprehensive, broad and diversified portfolio of products to the transit rail industries throughout the world.
- *Complementary Digital and Electronics Technologies*. Wabtec now has a comprehensive digital portfolio and leading engineering and technical intellectual property, which provides electronics and digital technologies to meet growing demand for train intelligence and network optimization.

- *Enhanced Aftermarket and Services Opportunities*. Wabtec has an installed base of more than 22,500 locomotives and content on virtually all North American locomotives and freight cars, as well as a diverse offering of Transit locomotives and cars both internationally and domestically, which enables significant opportunities in the higher-margin aftermarket parts and services business and mitigates the exposure to cycles.

Industry Overview

The Company primarily serves the global freight rail and passenger transit industries. As such, our operating results are largely dependent on the level of activity, financial condition and capital spending plans of freight 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 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 freight rail and passenger transit.

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 diesel and electric locomotives was about 114,800 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 2,900 new locomotives were delivered worldwide 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 174,000 new freight cars were delivered worldwide 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 35,000 new passenger transit vehicles were ordered worldwide 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 policies encourage continued investment in public mass transit, and modal shift from car to rail. 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 Freight Segment and the Transit Segment, both of which have different market characteristics and business drivers. The acquisitions of GE Transportation and Faiveley Transport significantly strengthened our capabilities and presence in the worldwide freight and transit markets, respectively, for all of our products and services, including electronic and digital products.

The Freight Segment primarily manufactures and provides aftermarket parts and services for new locomotives; provides components for new and existing locomotives and freight cars; builds new commuter locomotives; supplies rail control and infrastructure products including electronics, positive train control equipment, signal design and engineering services; provides a comprehensive suite of software-enabled solutions designed to improve customer efficiency and productivity in the transportation and mining industries; 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. Upon our acquisition of GE Transportation, we are the largest global manufacturer of diesel-electric locomotives for freight railroads producing mission-critical products and solutions that help railroads reduce operating costs, decrease fuel use, minimize downtime and comply with emissions standards. As a result of the large base of approximately 22,500 locomotives currently in use, Wabtec's services product lines of rebuilding, remanufacturing, maintaining, and exchanging locomotives and components in the aftermarkets provides a significant, recurring revenue stream. 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 2019, the Freight Segment accounted for approximately 65% of Wabtec's total net sales, with about 55% of its net sales in the U.S. In 2019, about 60% of the Freight Segment's net sales were in the aftermarket.

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, signal design and engineering services; 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 2019, the Transit Segment accounted for approximately 35% of our total net sales, with about 15% of its net sales in the U.S. Approximately half of the Transit Segment's net 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 Transit product 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.

Following is a summary of our leading products in both aftermarket and original equipment across both of our business segments in 2019:

Equipment:

- Diesel-electric locomotives for freight railroads
- Engines, electric motors and premium propulsion systems used in locomotives, mining, marine, stationary power and drilling applications
- Marine and mining products

Digital & Electronic Products:

- 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
- Train performance such as distributed locomotive power, train 'cruise control', and train remote control
- Transport intelligence such as Industrial/mobile Internet of Things (IoT) hardware & software, edge-to-cloud, on and off-board analytics & rules, asset performance management
- Transport logistics such as rail transportation management, shipper transportation management, port visibility and optimization
- Network optimization such as rail network scheduling, dispatch, and optimization, intermodal, terminal management and optimization, rail yard management and optimization

Components:

- Freight car trucks and braking equipment and related components for Freight applications
- 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
- New commuter and switcher locomotives

Services:

- Freight locomotive overhaul and refurbishment
- Master service agreements for locomotive and car maintenance
- Transit locomotive and car overhaul
- Unit exchange of locomotive components

Transit Products:

- Railway braking equipment and related components for Transit applications, including high-speed passenger transit vehicles
- Friction products, including brake shoes, discs and pads
- 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 freight rail and passenger transit 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 4,500 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. In addition, we are continuing to develop Energy Management Solutions for railroads to further reduce fuel consumption and emissions. These developments include the design of a battery electric locomotive that will be integrated with other diesel electric locomotives in a train. This hybrid train consist, under the control of our Trip Optimizer software, will significantly reduce fuel consumption as well as having the ability to operate in a low emission state while in populated areas. We are also considering development of locomotives for transit services to operate in a zero emissions environment (such as a tunnel) for extended periods of time.

For additional information on our business segments, see Note 21 of "Notes to Consolidated Financial Statements" included in Part IV, Item 15 of this report.

Competitive Strengths

Our key strengths include:

- ***Iconic Legacy and Strong Reputation with a History of over 150 Years of Innovation.*** The rail industry has been in operation for over 150 years and we have been at the forefront of shaping and transforming the rail landscape through various innovations and technologies. Dating back to 1869 and George Westinghouse's invention of the air brake, we are an established leader in the rail industry for freight and passenger transit vehicles. For over 110 years, GE Transportation has served the worldwide rail industry, which is a critical component of the global transportation system and the global economy, with an installed base of more than 22,500 locomotives worldwide. Faiveley Transport, founded in 1919, 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 from a full 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. In 2019, net sales of aftermarket parts and services represented about 55% of total net sales.
- ***Market Leader with Longstanding Customer Partnerships in a Critical Infrastructure Sector.*** For more than a century, rail has been a cornerstone of the global transportation system, and thus, the economy. Rail remains one of the most cost-effective, energy-efficient modes of transport, both domestically and internationally. As the largest global producer of diesel-electric locomotives, we have a significant market share both in North America and globally.
- ***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 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 designs, develops and manufactures critical components and systems for the rail, mining and marine industries, which include proprietary propulsion systems, engine platforms and controls technology. These innovative and differentiated solutions serve as the building blocks for the rail, mining and marine industries, and help keep our global customers at the forefront of advancing technologies. When coupled with our advanced digital analytic capabilities, our solutions help drive increased energy management, performance and reliability to our products. To that end, we have assembled a wide range of patented products, which we believe provides us with a competitive advantage.
- ***Leading the Digital Transformation of Wabtec's Industries.*** Our early investment in data analytics and software has allowed us to become a strategic partner for customers looking to derive new value from assets and digitally transform their operations. Through these initiatives, the transportation industry, from mine to port, from shipper to receiver, from port to intermodal terminals to main line locomotives and railcars and across train yards and operation centers, has

evolved to include digital solutions. The breadth of our Digital and Electronic solutions gives customers confidence in our ability to address their current and future needs.

- ***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.
- ***Streamlined Cost Structure and Operational Excellence Provide Operating Leverage and Support Wabtec's Growth***. Wabtec's lean manufacturing and continuous improvement initiatives, known as the Wabtec Excellence Program ("WEP"), 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. Building on our legacy WEP program, we are continuing to expand our Operating Excellence focus to also include Industry 4.0 as an additional lever in driving productivity and delighting customers. Our Operating Excellence Program leverages the breath and depth of our One Wabtec expertise across the organization in sharing of best practice, instilling a culture of learning, problem solving, continuous improvement, and driving standard operating practices. This, coupled with our overall manufacturing and supply base footprint initiatives, will drive increased flexibility and improved responsiveness to our customer needs while driving margin improvement through productivity.

Business strategy

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. 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 expect 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. We have a multi-year initiative to build on our existing expertise and technologies in the digital and electronics areas. 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 2019, net sales to non-U.S. customers were approximately $4.8 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.-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 2019, net sales of aftermarket parts and services represented about 55% of total net sales. 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 included in Part IV, Item 5 of this report for additional information about our recent acquisitions and joint ventures.

Backlog

The Company’s backlog was about $22.4 billion at December 31, 2019. For 2019, about 60% of total net 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, 2019 and December 31, 2018, and the expected year of completion are as follows:

In millions	Total Backlog 12/31/2019	Expected Delivery 2020	Expected Delivery Other Years	Total Backlog 12/31/2018	Expected Delivery 2019	Expected Delivery Other Years
Freight Segment	$ 18,945.3	$ 3,911.0	$ 15,034.3	$ 897.2	$ 693.1	$ 204.1
Transit Segment	3,486.4	1,692.8	1,793.6	3,584.4	1,767.1	1,817.3
Total	$ 22,431.7	$ 5,603.8	$ 16,827.9	$ 4,481.6	$ 2,460.2	$ 2,021.4

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, 2019, 2018 and 2017, we invested about $209.9 million, $87.5 million and $95.2 million, respectively, on product development and improvement activities. Significant incremental engineering expense is incurred with 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.

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. The railroads have until December 31, 2020 to complete testing of the systems.

Intellectual Property

We have 7,133 active patents worldwide and on average file for approximately 350 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, 2019, our top five customers accounted for approximately 27% of net sales: BNSF Railway, Canadian National Railway, Indian Railways, Komatsu Ltd. and Union Pacific Railroad. No one customer represents 10% or more of consolidated net 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 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, 2019, we employed approximately 27,500 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 freight rail rolling stock and passenger transit, 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 the timing of services performed under our locomotive maintenance contracts and 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 20 of “Notes to Consolidated Financial Statements” included in Part IV, Item 15 of this report.

Available Information

We maintain a website at *www.wabteccorp.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 mandate from the U.S. federal government.

In 2015, the U.S. rail industry's PTC deadline was extended by Congress 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. The Department of Transportation has largely granted the additional two years for compliance. All freight railroads are required to have testing complete and Positive Train Control fully implemented across the required network by December 31, 2020. These extensions could change the timing of our revenues and could cause us to reassess the staffing, resources and assets deployed in delivering PTC services to our customers.

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 canceled, 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, 2019, approximately 60% 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;
- possible local catastrophes, such as natural disasters and epidemics; 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 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 are, or could be, named as a defendant is unpredictable.

From time to time, we are subject, directly or through our subsidiaries, to litigation or other commercial disputes and other legal and regulatory proceedings with respect to our business, customers, suppliers, creditors, stockholders, product liability (including, asbestos claims), intellectual property infringement, competition and antitrust claims, 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. 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. In addition, although in some cases we may be indemnified by non-affiliated entities that retain liabilities in connection with specific matters, there can be no assurance that these indemnitors will remain financially viable and capable of satisfying their obligations.

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.

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 cybersecurity and data protection risks relating to cyber attacks and information technology failures that could cause loss of confidential information and other business disruptions.

We rely extensively on information technology in our business. We also collect, process, and retain sensitive and confidential customer information, including proprietary business information, personal data and other information that may be subject to privacy and security laws, regulations and/or customer-imposed data protection controls. We also provide technological products integral to train operation. Accordingly, our business may be adversely impacted by disruptions to our own or third-party information technology infrastructure, which could result from individual or highly-coordinated cyber attacks, including but not limited to data theft, system breaches, malfeasance or improper use or unauthorized access to IT systems. Our business may also be adversely impacted by unintentional technology disruptions, including those resulting from programming errors, employee operational errors and software defects.

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 disease outbreak, fires, earthquakes, explosions, floods, tornadoes, 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.

Changes to international trade policies, including tariffs and foreign trade restrictions, could adversely affect our business.

As a global transportation company, we generate export sales from our U.S. operations and also derive international sales through our foreign subsidiaries, licensees and joint ventures. We also do business with industry suppliers located in various international markets. A protectionist trade environment in either the United States or those foreign countries in which we do business, such as a change in the current tariff structures, export compliance or other trade policies, may adversely affect our business. In particular, such policies may impact or delay our customers' investments in our products, reduce the competitiveness of our products in certain markets, and inhibit our ability to cost-effectively purchase necessary inputs from certain suppliers. In addition, to the extent developments in international trade relations result in reduced global trade or slower growth in global trade, it is likely that this would result in reductions in investment in freight and transit rail.

International trade policies are affected by a diverse array of factors, including global and national economic and political conditions, which make it impossible for us to predict future developments regarding tariffs and other trade restrictions. Although we actively monitor developments in international trade and proactively engage in efforts to mitigate the effect of trade policies, there can be no guarantee that these efforts will be successful.

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.

We have substantial operations located in emerging markets, and are subject to regulatory, economic, social and political uncertainties in such markets.

We have substantial operations located in emerging markets, such as Brazil, India, Kazakhstan, the Russian Federation and Ukraine. Operations in such emerging markets are inherently risky due to a number of regulatory, economic, social and political uncertainties. These risks include economies that may be dependent on only a few products and are therefore subject to significant fluctuations, weak legal systems which may affect our ability to enforce contractual rights, possible exchange controls, unstable governments, nationalization or privatization actions or other government actions affecting the flow of goods and currency.

Significant changes in economic and regulatory policy in emerging countries as well as social or political uncertainties could significantly harm business and economic conditions in these markets generally and could disproportionately impact the rail industry, which could adversely affect our business and prospects in these markets.

In addition, physical and financial infrastructure may be less developed in some emerging countries than that of many developed nations. Any disruptions with respect to banking and financial infrastructure, communication systems or any public facility, including transportation infrastructure, could disrupt our normal business activity. Such 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, 2019, we had total debt of $4.4 billion, including $3.5 billion related to senior notes and $0.9 billion related to term loans and amounts drawn under our revolving loan facility, in each case, under the Senior Credit Facility. 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 indentures for our outstanding senior notes and our Credit Agreement contain various covenants that limit our management's discretion in the operation of our businesses.

Our Credit Agreement subjects us to customary (i) affirmative covenants, including requirements with respect to certain reporting obligations on us and our subsidiaries, and (ii) negative covenants, including limitations on: indebtedness; liens; restricted payments; fundamental changes (including certain changes in control); 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, in connection with the acquisition of GE Transportation and in the event of any further material acquisition in which the cash consideration to be paid exceeds $500.0 million, the maximum Leverage Ratio permitted adjusts to (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 indentures under which our senior notes were issued contain covenants and restrictions which limit, subject to certain exceptions, certain sale and leaseback transactions with respect to principal properties, the incurrence of secured debt without equally and ratably securing the senior notes and certain merger and consolidation transactions. In addition, the indentures require that we offer to repurchase our outstanding senior notes upon the occurrence of certain change of control triggering events.

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 from business operations to integration matters;
- 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.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

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, 2019. 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 mainly long-term and generally include options to renew.

Location	Primary Use	Segment	Own/Lease	Approximate Square Feet	
Domestic					
Erie, PA	Manufacturing/Warehouse/Office	Freight	Own	3,800,000	
Rothbury, MI	Manufacturing/Warehouse/Office	Freight	Own	500,000	
Grove City, PA	Manufacturing/Warehouse	Freight	Own	486,000	
Wilmerding, PA	Manufacturing/Service	Freight	Own	365,000	(1)
Boise, ID	Manufacturing	Freight	Own	326,000	
Salem, VA	Manufacturing	Freight	Own	320,000	
Justin, Texas	Manufacturing/Warehouse	Freight	Own	305,000	
Fort Worth, Texas	Manufacturing/Warehouse	Freight	Own	304,000	
Houston, Texas	Manufacturing/Service	Freight	Own	280,000	
Hanover Park, Illinois	Manufacturing	Freight	Lease	250,000	
Pittsburgh, PA	Office	Global HQ	Lease	84,000	
International					
Shenyang, China	Manufacturing/Warehouse/Office	Transit	Own	336,000	
Doncaster, UK	Manufacturing	Transit	Own	330,000	
Changzhou, China	Manufacturing	Transit	Own	316,000	
Northampton, UK	Manufacturing	Freight	Lease	300,000	
Shenyang City, China	Manufacturing	Transit	Lease	291,000	
Piossasco, Italy	Manufacturing	Transit	Own	301,000	
Burton on Trent, UK	Manufacturing/Office	Transit	Lease	260,000	

(1) Approximately 250,000 square feet are currently used in connection with the Company’s 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 20 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.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following table provides information on our executive officers as of February 25, 2020.

Officers	Age	Position
Albert J. Neupaver	69	Executive Chairman of the Board
Rafael Santana	48	President and Chief Executive Officer
David L. DeNinno	64	Executive Vice President, General Counsel and Secretary
Patrick D. Dugan	53	Executive Vice President Finance, and Chief Financial Officer
Scott E. Wahlstrom	56	Executive Vice President and Chief Human Resources Officer
Michael E. Fetsko	55	President, Freight and Industrial Components
Pascal Schweitzer	43	President, Global Freight Services
Nalin Jain	50	President, Equipment
Lillian Leroux	48	President, Transit
Dominique Malenfant	58	Senior Vice President and Global Technology Officer
John A. Mastalerz	53	Senior Vice President of Finance and Chief Accounting Officer
Greg Sbrocco	51	Senior Vice President, Global Operations

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.

Rafael Santana was named President and Chief Executive Officer of the Company effective July 1, 2019. Previously, he served as Executive Vice President from February 2019 to July 2019. 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 Senior 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 and Chief Human Resources Officer effective February 2019. Previously, Mr. Wahlstrom served as Executive Vice President - Human Resources from December 2016 to February 2019 and served as Senior Vice President, Human Resources since January 2012. Prior to that, Mr. Wahlstrom had 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.

Michael E. Fetsko was named President, Freight and Industrial Components effective January 2017. Previously, Mr. Fetsko served as Vice President and Group Executive from January 2014. He joined Wabtec in July of 2011 as Vice President, Freight Pneumatics. Prior to joining Wabtec, Mr. Fetsko served in various executive management roles with Bombardier Transportation. Prior to Bombardier, Mr. Fetsko served in various management roles with two different environmental engineering firms.

Nalin Jain was named President, Global Equipment business effective May 2019. Previously, Mr. Jain served as President & CEO, International markets since Aug 2017 for GE Transportation. Prior to that, Mr. Jain had multiple leadership roles of increasing responsibility with GE Aviation and GE Transportation, since September 2005. Mr. Jain served as Director Global Partnerships with Bombardier Inc since July 2002 and prior to that he worked for Saint Gobain.

Lilian Leroux was named President, Transit effective March 2019. Previously he served as Group President—Brakes & Safety from January 2017 to October 2019. Prior to that, Mr. Leroux held various executive management roles with Faiveley Transport, starting in January 2001.

Pascal Schweitzer was named President, Global Freight Services on February 25, 2019. Previously Mr. Schweitzer was the Vice President—Services of GE Transportation since April 2017. He served as General Manger – Europe – Power Services for GE Power from November 2015 through April 2017 and prior to that several positions with Alstom Power.

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

John A. Mastalerz was named Senior Vice President of Finance and Chief Accounting Officer in February 2020. Previously, Mr. Mastalerz served as Senior Vice President, Corporate Controller and Principal Accounting Officer from July 2017 to February 2020 and 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.

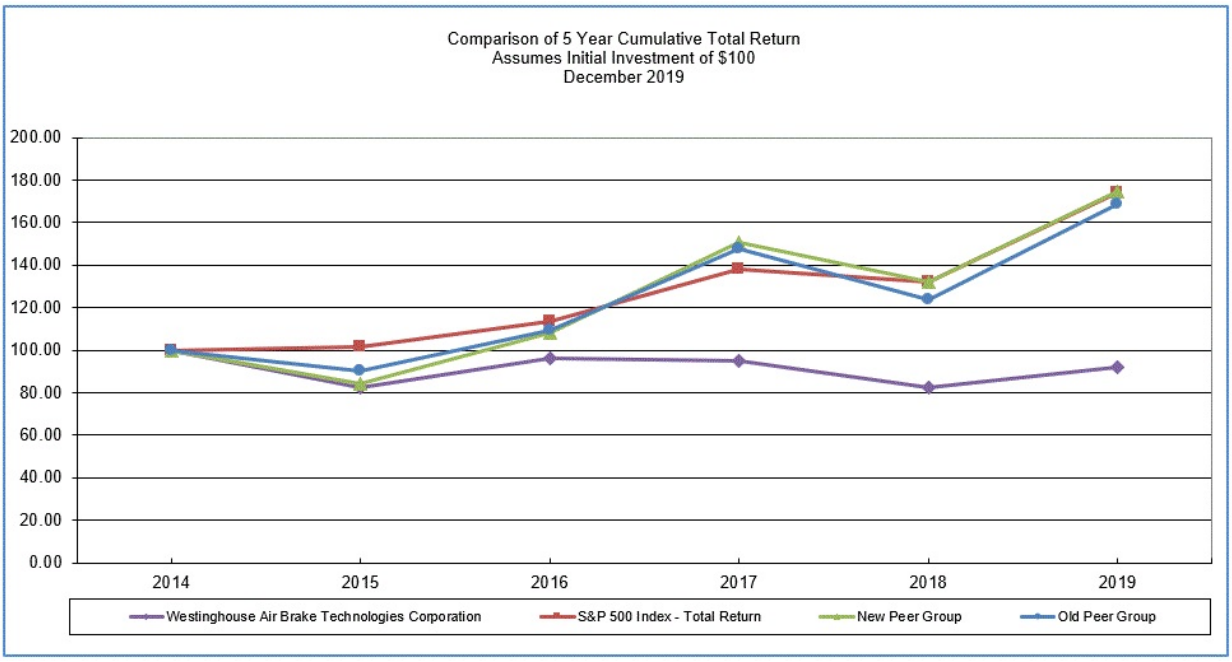
Greg Sbrocco was named Senior Vice President, Global Operations, effective February 25, 2019. Prior to this, Mr. Sbrocco was Global Supply Chain Leader for GE Transportation. Mr. Sbrocco has been with GE for 27 years as he joined in 1992 as an Environmental Engineer for the GE Energy business. During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

PART II

Item 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND 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 14, 2020, there were 191,711,224 shares of Common Stock outstanding held by 126,748 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, 2019, of Wabtec’s common stock to (i) the S&P 500, (ii) our new peer group of manufacturing companies which consists of the following publicly traded companies: AGCO, American Axle & Manufacturing Holdings, AMETEK, Arconic, CSX, Dana, Dover, Flowserve, Fortive, Illinois Tool Works, Navistar International, Norfolk Southern, Oshkosh, Parker-Hannifin, Rockwell Automation, Tenneco, Terex, Textron, WABCO, and Xylem, and (iii) our old peer group of manufacturing companies which consist 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.



Issuer Purchases of Common Stock

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 2019	—	$ —	—	$ 137.8
November 2019	—	$ —	—	$ 137.8
December 2019	—	$ —	—	$ 137.8
Total quarter ended December 31, 2019	—	$ —	—	$ 137.8

(1) On February 7, 2020, the Board of Directors amended its stock repurchase authorization to $500 million of the Company's outstanding shares. This new stock repurchase authorization supersedes the previous authorization of $350 million, of which $137.8 million remained. During 2019, the Company did not repurchase any shares. The Company intends to purchase shares on the open market or in negotiated 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 Senior Credit Facility, 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.

	Year Ended December 31,				
In millions, except per share amounts	**2019**	**2018**	**2017**	**2016**	**2015**
Income Statement Data					
Net sales	$ 8,200.0	$ 4,363.5	$ 3,881.7	$ 2,931.2	$ 3,308.0
Gross profit	2,278.0	1,233.9	1,065.3	924.2	1,047.8
Operating expenses	(1,614.9)	(760.5)	(644.2)	(467.6)	(439.0)
Income from operations	$ 663.1	$ 473.4	$ 421.1	$ 456.6	$ 608.8
Interest expense, net	$ (219.1)	$ (112.2)	$ (77.9)	$ (50.3)	$ (27.3)
Other income, net	2.8	6.4	8.9	6.5	3.8
Net income attributable to Wabtec shareholders	$ 326.7	$ 294.9	$ 262.3	$ 304.9	$ 398.6
Diluted Earnings per Common Share					
Net income attributable to Wabtec shareholders	$ 1.84	$ 3.05	$ 2.72	$ 3.34	$ 4.10
Cash dividends declared per share	$ 0.48	$ 0.48	$ 0.44	$ 0.36	$ 0.28
Fully diluted shares outstanding	177.3	96.5	96.1	91.1	97.0
Balance Sheet Data					
Total assets	$ 18,944.2	$ 8,649.2	$ 6,580.0	$ 6,581.0	$ 3,229.5
Cash, cash equivalents, and restricted cash	604.2	2,342.3	233.4	398.5	226.2
Total debt	4,429.3	3,856.9	1,870.5	1,892.8	692.2
Total equity	9,993.6	2,869.1	2,828.6	2,976.8	1,701.3

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 locomotives, value-added, technology-based equipment, systems, and services for the global freight rail and passenger transit industries. 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 efficiency 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 over 50 countries. In 2019, net sales of aftermarket parts and services represented about 55% of total net sales, while 60% of the Company's net sales 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 diesel and electric locomotives was about 114,800 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 2,900 new locomotives were delivered worldwide 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 174,000 new freight cars were delivered worldwide 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 35,000 new passenger transit vehicles were ordered worldwide 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 policies encourage continued investment in public mass transit and modal shift from car to rail. 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 2020 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, General Electric Company ("GE"), GE Transportation, a Wabtec company formerly known as 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, 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.

As part of the Merger, 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 (the "Direct Sale"). 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. Following this issuance of additional SpinCo common stock to GE, and immediately prior to the Distribution (as defined below), 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 to its stockholder (the "Distribution"). Immediately after the Distribution, Merger Sub merged with and into SpinCo (the "Merger"), 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, Wabtec issued 46,763,975 shares of common stock to the holders of GE common stock, 19,018,207 shares of common stock to GE and 10,000 shares of preferred stock to GE and made a cash payment to GE of $2.885 billion. As a result and calculated based on Wabtec’s outstanding common stock on a fully-diluted, as-converted and as-exercised basis, as of February 25, 2019, approximately 49.2% of the outstanding shares of Wabtec common stock was held collectively by GE and holders of GE common stock (with 9.9% held by GE directly in shares of Wabtec common stock and 15% underlying the shares of Wabtec convertible preferred stock held by GE) and approximately 50.8% of the outstanding shares of Wabtec common stock held by pre-Merger Wabtec stockholders, in each case calculated on a fully-diluted, as-converted and as-exercised basis. Following the Merger, GE also retained 15,000 shares of SpinCo Class A non-voting preferred stock, and Wabtec held 10,000 shares of SpinCo Class B non-voting preferred stock.

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), and Direct Sale Purchaser, which also is Wabtec’s wholly owned subsidiary, together 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 and SpinCo, directly or through subsidiaries entered into additional agreements relating to, among other things, intellectual property, employee matters, tax matters, research and development and transition services.

On May 6, 2019, GE completed the sale of approximately 8,780 shares of Wabtec's Series A Preferred stock which converted upon the sale to 25,300,000 shares of Wabtec's common stock. On August 9, 2019, GE completed a sale of the remaining shares of Series A Preferred Stock outstanding which converted to approximately 3,515,500 shares of common stock, as well as 16,969,656 shares of common stock owned directly by GE. Finally, on September 12, 2019, GE completed a sale of all of its remaining shares of common stock of Wabtec, approximately 2,048,515 shares. In conjunction with these secondary offerings, the Company waived the requirements under the shareholders agreement for GE to maintain certain ownership levels of Wabtec's stock following the closing date of the Merger. The Company did not receive any proceeds from the sale of any of these shares.

Total future consideration to be paid by Wabtec to GE includes a fixed payment of $470.0 million, which is directly related to the timing of tax benefits expected to be realized by Wabtec as a result of the acquisition of GE Transportation. This payment is considered contingent consideration because the timing of cash payments to GE is directly related to the future timing of tax benefits received by the Company as a result of the acquisition of GE Transportation. The estimated total value of the consideration to be paid by Wabtec in the acquisition transaction is approximately $10.3 billion, including the cash paid for the Direct Sales Assets, equity transferred for SpinCo, contingent consideration, assumed debt and net of cash acquired. The estimated consideration is based on the Company’s closing share price of $73.36 on February 22, 2019 and the preliminary fair value of the contingent consideration. The value of the preliminary purchase price consideration could change when the Company has completed the detailed valuation of the contingent consideration and other necessary calculations.

RESULTS OF OPERATIONS

Consolidated Results

2019 COMPARED TO 2018

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

In millions	For the year ended December 31, 2019	2018	Percent Change
Net sales			
Sales of goods	$ 6,907.9	$ 4,178.0	65.3 %
Sales of services	1,292.1	185.5	596.5 %
Total net sales	8,200.0	4,363.5	87.9 %
Cost of sales			
Cost of goods	(5,128.4)	(2,973.5)	72.5 %
Cost of services	(793.6)	(156.1)	408.4 %
Total cost of sales	(5,922.0)	(3,129.6)	89.2 %
Gross profit	2,278.0	1,233.9	84.6 %
Selling, general and administrative expenses	(1,166.6)	(633.2)	84.2 %
Engineering expenses	(209.9)	(87.5)	139.9 %
Amortization expense	(238.4)	(39.8)	499.0 %
Total operating expenses	(1,614.9)	(760.5)	112.3 %
Income from operations	663.1	473.4	40.1 %
Other income and expenses			
Interest expense, net	(219.1)	(112.2)	95.3 %
Other income, net	2.8	6.4	(56.3) %
Income from operations before income taxes	446.8	367.6	21.5 %
Income tax expense	(120.3)	(75.9)	58.5 %
Net income	326.5	291.7	11.9 %
Less: Net loss attributable to noncontrolling interest	0.2	3.2	(93.8) %
Net income attributable to Wabtec shareholders	$ 326.7	$ 294.9	10.8 %

Segment change

The Company has two reportable segments—the Freight Segment and the Transit Segment. Initiatives to integrate GE Transportation operations into Wabtec including recent restructuring programs announced in late 2019 resulted in changes to the Company's organizational structure and the financial reporting utilized by the Company's chief operating decision maker to assess performance and allocate resources; as a result, certain asset groups were reorganized from the Freight Segment to the Transit Segment and vice versa. The change in the Company’s reportable segments was effective in the fourth quarter of 2019 and is reflected below in 2019 and through the retrospective revision of 2018 and 2017 segment information. The Company believes these changes better present management's new view of the business.

The following table shows the major components of the change in net sales in 2019 from 2018:

In millions	Freight Segment	Transit Segment	Total
2018 Net Sales	$ 1,766.4	$ 2,597.1	$ 4,363.5
Acquisitions	3,840.7	22.8	3,863.5
Foreign Exchange	(17.7)	(136.7)	(154.4)
Organic	(148.0)	275.4	127.4
2019 Net Sales	$ 5,441.4	$ 2,758.6	$ 8,200.0

Net sales

Net sales increased by $3.8 billion, or 87.9%, to $8.2 billion in 2019 from $4.4 billion in 2018. The increase is primarily due to net sales from acquisitions of $3.9 billion, mainly the acquisition of GE Transportation. GE Transportation contributed $3.8 billion of net sales in the year, primarily from locomotive equipment products and services. Additionally, Transit Segment net sales increased $162 million due to increased original equipment project deliveries for HVAC, door, and brake and coupler systems and higher aftermarket deliveries for brake and coupler spare parts and door systems. These increases were partially offset by an organic decrease of $148 million in the Freight Segment, primarily in Components due to a lower carbuild in 2019 and in Electronics due to lower PTC hardware demand. Unfavorable changes in foreign currency exchange rates reduced net sales by $154 million.

Cost of sales

Cost of sales increased by $2.8 billion to $5.9 billion in 2019 compared to $3.1 billion in 2018. The increase is primarily due to $2.8 billion of incremental costs from acquisitions, mainly GE Transportation. In 2019 cost of sales as a percentage of net sales was 72.2% compared to 71.7% in 2018. Cost of sales in 2019 includes $185 million of non-recurring costs related to purchase price accounting for the step-up of inventory of GE Transportation on the date of acquisition, and $38 million of restructuring charges related to certain plant consolidations. Cost of sales in 2018 included $18 million of restructuring costs, primarily in the Transit Segment. Excluding these non-recurring costs, cost of sales as a percentage of net sales was 69.5% in 2019 and 71.3% in 2018, representing a 1.8% improvement. The margin improvement can be attributed to the overall product mix, shifting away from lower margin Transit sales to higher margin Freight sales.

Operating expenses

Total operating expenses increased 112.3% to 19.7% of net sales in 2019 compared to 17.4% in 2018. Selling, general, and administrative expenses increased $533 million, or 84.2%, primarily due to $369 million of incremental expense from acquisitions, mainly GE Transportation, and $230 million of incremental GE Transportation transaction and restructuring costs, as well as certain litigation costs. In the prior year, selling, general, and administrative expenses included $58 million of costs related to the GE Transportation transaction, restructuring costs related to the exit of certain operations and headcount reductions across the company and costs related to a goods and service tax law change in India. Engineering expense increased $122 million and amortization expense increased $199 million due to incremental expense from the acquisition of GE Transportation.

Interest expense, net

Interest expense, net, increased $107 million in 2019 attributable to higher overall debt balances related to the acquisition of GE Transportation.

Income taxes

The effective income tax rate was 26.9% and 20.6% in 2019 and 2018, respectively. The increase in the effective tax rate in 2019 is primarily the result of non-deductible transaction related expenses incurred as a result of the acquisition of GE Transportation, a higher earnings mix in higher tax jurisdictions, increased estimated liabilities resulting from the provision of the 2017 Tax Cuts and Jobs Act (the "Tax Act") as well as a benefit from the completion of the accounting for the income tax effects of the Tax Act recorded in 2018.

Freight Segment

The following table shows our Consolidated Statements of Operations for our Freight Segment:

In millions	For the year ended December 31, 2019	2018	Percent Change
Net sales:			
Sales of goods	$ 4,186.5	$ 1,616.3	159.0 %
Sales of services	1,254.9	150.1	736.0 %
Total net sales	5,441.4	1,766.4	208.1 %
Cost of sales:			
Cost of goods	(3,096.5)	(1,072.9)	188.6 %
Cost of services	(763.5)	(126.9)	501.7 %
Total cost of sales	(3,860.0)	(1,199.8)	221.7 %
Gross profit	1,581.4	566.6	179.1 %
Operating Expenses	(938.5)	(232.3)	304.0 %
Income from operations ($)	642.9	334.3	92.3 %
Income from operations (%)	11.8 %	18.9 %	

The following table shows the major components of the change in net sales for the Freight Segment in 2019 from 2018:

In millions	
2018 Net Sales	$ 1,766.4
Acquisitions	3,840.7
Changes in Sales by Product Line:	
Components	(87.2)
Electronics/Digital	(70.1)
Services	9.3
Foreign Exchange	(17.7)
2019 Net Sales	$ 5,441.4

Net sales

Freight Segment net sales increased by $3.7 billion, or 208.1%, to $5.4 billion, due to the acquisition of GE Transportation which contributed $3.8 billion of net sales in the year, primarily from locomotive equipment products and services. This increase was partially offset by lower net sales in Components due to a lower freight carbuild in 2019 and certain restructuring and plant consolidation efforts, and in Digital Electronics due to lower PTC hardware demand. Unfavorable foreign currency exchange rate changes decreased net sales by $18 million.

Cost of sales

Freight Segment cost of sales increased by $2.7 billion to $3.9 billion in 2019. The increase is primarily due to $2.8 billion of incremental cost of sales and services from the acquisition of GE Transportation. In 2019, total cost of sales as a percentage of total net sales was 70.9% compared to 67.9% in 2018. Total cost of sales in 2019 includes $185 million of non-recurring costs related to purchase price accounting for the step-up of the inventory of GE Transportation on the date of acquisition and $34 million of restructuring costs related to integrating our combined business. Excluding these non-recurring costs, total cost of sales as a percentage of net sales was 66.9%, 1.0% lower than 2018. This decrease can be attributed to a higher mix of freight services sales offset by a decrease in the higher margin sales from Digital Electronics.

Operating expenses

Freight Segment operating expenses increased $706 million, or 304.0%, in 2019 and increased to 17.2% of net sales. Selling, general, and administrative expenses increased $397 million due to $368 million in incremental expense from the acquisition of GE Transportation and $33 million for transaction and restructuring costs related to the GE Transportation transaction. Engineering expense increased $116 million and amortization expense increased $200 million, both due to the acquisition of GE Transportation.

Transit Segment

The following table shows our Consolidated Statements of Operations for our Transit Segment:

In millions	For the year ended December 31, 2019	2018	Percent Change
Net sales	$ 2,758.6	$ 2,597.1	6.2 %
Cost of sales	(2,062.0)	(1,929.8)	6.9 %
Gross profit	696.6	667.3	4.4 %
Operating Expenses	(482.2)	(474.8)	1.6 %
Income from operations ($)	214.4	192.5	11.4 %
Income from operations (%)	7.8 %	7.4 %	

The following table shows the major components of the change in net sales for the Transit Segment in 2019 from 2018:

In millions	
2018 Net Sales	$ 2,597.1
Acquisitions	22.8
Changes in Sales by Product Line:	
OEM	141.3
Aftermarket	134.1
Foreign Exchange	(136.7)
2019 Net Sales	$ 2,758.6

Net sales

Transit Segment net sales increased by $162 million, or 6.2%, primarily due to increased original equipment project deliveries for HVAC, door, and brake and coupler systems and higher aftermarket deliveries for brake and coupler spare parts and door systems. Unfavorable foreign currency exchange rate changes decreased net sales by $137 million.

Cost of sales

Transit Segment cost of sales increased by $132 million to $2.1 billion in 2019. In 2019, cost of sales as a percentage of net sales was 74.7% compared to 74.3% in 2018. Total cost of sales includes $5 million of restructuring charges primarily related to severance and plant consolidations while total cost of sales in 2018 included $16 million of restructuring costs. Excluding these costs, total cost of sales as a percentage of net sales was 74.6% in 2019 and 73.7% in 2018. This increase can be attributed to an unfavorable product mix consisting of lower margin overhaul contracts and less original equipment and aftermarket brake and coupler systems.

Operating expenses

Transit Segment operating expenses increased $7 million to $482 million, or 1.6% in 2019 and decreased 80 basis points to 17.5% of net sales. Operating expenses includes $13 million for restructuring costs in the current year, compared to $26 million in the prior year. The decrease as a percentage of net sales can be attributed to the effect of prior year restructuring plans and headcount reductions in the current year.

2018 COMPARED TO 2017

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

In millions	For the year ended December 31, 2018	2017	Percent Change
Net sales			
Sales of goods	$ 4,178.0	$ 3,685.6	13.4 %
Sales of services	185.5	196.1	(5.4) %
Total net sales	4,363.5	3,881.7	12.4 %
Cost of sales			
Cost of goods	(2,973.5)	(2,667.8)	11.5 %
Cost of services	(156.1)	(148.6)	5.0 %
Total cost of sales	(3,129.6)	(2,816.4)	11.1 %
Gross profit	1,233.9	1,065.3	15.8 %
Selling, general and administrative expenses	(633.2)	(512.5)	23.6 %
Engineering expenses	(87.5)	(95.2)	(8.1) %
Amortization expense	(39.8)	(36.5)	9.0 %
Total operating expenses	(760.5)	(644.2)	18.1 %
Income from operations	473.4	421.1	12.4 %
Other income and expenses			
Interest expense, net	(112.2)	(77.9)	44.0 %
Other income, net	6.4	8.9	(28.1) %
Income from operations before income taxes	367.6	352.1	4.4 %
Income tax expense	(75.9)	(89.8)	(15.5) %
Net income	291.7	262.3	11.2 %
Less: Net loss attributable to noncontrolling interest	3.2	—	100.0 %
Net income attributable to Wabtec shareholders	$ 294.9	$ 262.3	12.4 %

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

In millions	**Freight**	**Transit**	**Total**
2017 Net Sales	$ 1,538.6	$ 2,343.1	$ 3,881.7
Acquisitions	50.9	83.8	134.7
Foreign Exchange	(1.5)	63.7	62.2
Organic	178.4	106.5	284.9
2018 Net Sales	$ 1,766.4	$ 2,597.1	$ 4,363.5

Net sales

Net sales increased by $482 million to $4.4 billion in 2018 from $3.9 billion in 2017. The increase is primarily due to an organic increase of $113 million from higher demand for freight rail components, an increase of $76 million for train control and signaling products, and an increase of $124 million due to transit original equipment and aftermarket brake and coupler products, partially offset by lower door and HVAC sales. Additionally, sales from acquisitions increased net sales by $135 million, and favorable foreign exchange increased net sales $62 million.

Cost of sales

Cost of sales increased by $313.2 million to $3.1 billion in 2018 compared to $2.8 billion in 2017. In 2018, cost of sales as a percentage of net sales was 71.7% compared to 72.5% in 2017. Cost of sales in 2018 includes $18 million of restructuring costs, primarily in the Transit Segment. Cost of sales in 2017 includes $45 million of project adjustments on certain projects and $12 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 net sales.

Operating Expenses

Total operating expenses as a percentage of net sales increased 0.8% to 17.4% in 2018 compared to 16.6% in 2017. Selling, general, and administrative expenses increased $121 million, or 23.5%, primarily due to $21 million of costs related to the GE Transportation transaction, $20 million of restructuring costs related to the exit of certain operations and headcount reductions across the company, $7 million of costs related to a goods and service tax law change in India, $15 million of increased employee benefit costs and $18 million in incremental expense from acquisitions. Changes in foreign currency rates increased selling, general, and administrative expenses by $14 million and organic sales volume increases contributed to the remainder of the change. In 2017, selling, general, and administrative expenses included $30 million of Faiveley Transport transaction and restructuring costs. Engineering expense decreased by $8 million, or 8.1%, primarily due to timing of research and development expenses. Amortization expense increased $3 million due to amortization of intangibles associated with acquisitions.

Interest expense, net

Overall interest expense, net, increased $34 million in 2018 because of interest expense associated with the GE Transportation transaction of $29 million. In addition, net interest expense in the prior year included a $2 million benefit related to the prepayment of debt assumed in the Faiveley Transport acquisition.

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 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.

Freight Segment

The following table shows our Consolidated Statements of Operations for our Freight Segment for the periods indicated.

	For the year ended December 31,		
In millions	**2018**	**2017**	**Percent Change**
Net sales:			
Sales of goods	$ 1,616.3	$ 1,378.2	17.3 %
Sales of services	150.1	160.4	(6.4) %
Total net sales	1,766.4	1,538.6	14.8 %
Cost of sales:			
Cost of goods	(1,072.9)	(952.2)	12.7 %
Cost of services	(126.9)	(119.1)	6.5 %
Total cost of sales	(1,199.8)	(1,071.3)	12.0 %
Gross profit	566.6	467.3	21.2 %
Operating Expenses	(232.3)	(195.6)	18.8 %
Income from operations ($)	334.3	271.7	23.0 %
Income from operations (%)	18.9 %	17.7 %	

The following table shows the major components of the change in net sales for the Freight Segment in 2018 from 2017:

In millions	
2017 Net Sales	$ 1,538.6
Acquisitions	50.9
Changes in Net Sales by Product Line:	
Components	112.7
Digital Electronics	75.7
Services	(10.0)
Foreign Exchange	(1.5)
2018 Net Sales	$ 1,766.4

Net sales

Freight Segment net sales increased by $228 million, or 14.8%, primarily due to an organic increase of $113 million from higher demand for freight rail components and an increase of $76 million for train control and signaling products. Acquisitions increased net sales by $51 million.

Cost of sales

Freight Segment cost of sales decreased 1.7% as a percentage of net sales to 67.9% in 2018 compared to 69.6% in 2017. The decrease is primarily related to a favorable product mix which saw an increase in net 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. Additionally, there were $11 million of project adjustments and restructuring costs in 2017, which did not recur in 2018.

Operating expenses

Freight Segment operating expenses increased $37 million, or 18.8%, in 2018. The increase is primarily attributable to increased sales and marketing expenses attributable to the increased sales volumes and, increased employee benefit costs, and $11 million of incremental operating expenses from prior year acquisitions.

Transit Segment

The following table shows our Consolidated Statements of Operations for our Transit Segment:

In millions	For the year ended December 31, 2018	2017	Percent Change
Net sales	$ 2,597.1	$ 2,343.1	10.8 %
Cost of sales	(1,929.8)	(1,745.1)	10.6 %
Gross profit	667.3	598.0	11.6 %
Operating Expenses	(474.8)	(420.8)	12.8 %
Income from operations ($)	192.5	177.2	8.6 %
Income from operations (%)	7.4 %	7.6 %	

The following table shows the major components of the change in net sales for the Transit Segment in 2018 from 2017:

In millions	
2017 Net Sales	$ 2,343.1
Acquisitions	83.8
Changes in Net Sales by Product Line:	
OEM	61.4
Aftermarket	45.1
Foreign Exchange	63.7
2018 Net Sales	$ 2,597.1

Net sales

Transit Segment net sales increased by $254 million, or 10.8%, primarily due to $84 million from sales related to acquisitions, a $61 million increase primarily for original equipment brake products, and favorable foreign exchange of $64 million.

Cost of sales

Transit Segment cost of sales decreased 0.2% as a percentage of net sales to 74.3% in 2018 compared to 74.5% in 2017. Cost of sales in 2018 includes $16 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 $38 million of project adjustments on certain contracts primarily related to material and warranty cost and $7 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 1.1% as a percentage of net sales. This increase is a result of additional costs on projects primarily in the U.K.

Operating expenses

Transit Segment operating expenses increased $54 million, or 12.8%, in 2018 and increased 30 basis points to 18.3% of net sales. Operating expense included $18 million and $20 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 million of costs related to a goods and service tax law change in India. Excluding restructuring and integration costs in both years and the impact of the goods and service tax law change in 2018, Transit operating expenses increased $49 million. This increase is primarily due to increased sales volumes, increased employee benefit costs of $10 million, and $11 million of incremental operating expenses from acquisitions. In addition, changes in foreign currency rates increased operating expenses by $16 million.

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 millions	For the year ended December 31, 2019	2018	2017
Cash provided by (used for):			
Operating activities	$ 1,015.5	$ 314.7	$ 188.8
Investing activities	(3,177.8)	(147.3)	(1,033.5)
Financing activities:			
Proceeds from debt	3,982.4	3,480.7	1,216.7
Payments of debt	(3,423.6)	(1,454.0)	(1,269.5)
Cash dividends	(81.7)	(46.3)	(42.2)

Operating activities. Cash provided by operations in 2019 was $1,016 million compared with $315 million in 2018. In comparison to 2018, cash provided by operations increased due to favorable working capital performance and higher net income of $35 million. The major components of the increase in cash provided by operations were as follows: a favorable change in inventories of $365 million which is attributable to improved controls over inventory management directed at reducing inventory levels and the liquidation of acquired inventory related to the acquisition of GE Transportation, improved performance on the collection of accounts receivable of $48 million, a favorable change in non-cash items of $228 million related primarily to increased depreciation and amortization as a result of the acquisition of GE Transportation, and a favorable change in other assets and liabilities of $259 million primarily due to the timing of payments related to accrued expenses. These favorable changes in working capital were offset by an unfavorable change in accounts payable of $193 million due to the timing of payments to suppliers.

Cash provided by operations in 2018 was $315 million compared with $189 million in 2017. In comparison to 2017, cash provided by operations increased due to favorable working capital performance and higher net income of $29 million. The major components of the increase in cash provided by operations were as follows: a favorable change in accounts payable of $141 million due to the timing of payments to suppliers, a favorable change in taxes of $22 million due to the revaluation of deferred taxes caused by the Tax Act and the timing of income tax payments, and a favorable change in accrued liabilities and customer deposits of $51 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 $100 million due to efforts to ramp up production in anticipation of stronger product demand in 2019.

Investing activities. In 2019, 2018 and 2017, cash used in investing activities was $3,178 million, $147 million and $1,034 million, respectively. The major components of the cash outflow in 2019 was $2,996 million in net cash paid for primarily the GE Transportation acquisition and planned additions to property, plant, and equipment of $185 million for continued investments in our facilities and manufacturing processes. This compares to $93 million for property, plant, and equipment additions and $51 million in net cash paid for acquisitions in 2018. In 2017, $90 million of cash was used to purchase property, plant, and equipment and net cash paid for acquisitions was $945 million, primarily related to the acquisition of Faiveley Transport.

Financing activities. In 2019, cash provided by financing activities was $462 million, which included net proceeds from debt of $559 million and $82 million of dividend payments. In 2018, cash provided by financing activities was $1,978 million, which included net proceeds from debt of $2,027 million and dividend payments of $46 million. In 2017, cash used for financing activities was $97 million, which included net repayments of debt of $53 million and dividend payments of $42 million.

The following table shows outstanding indebtedness at December 31, 2019 and 2018:

In millions	December 31, 2019	December 31, 2018
Senior Credit Facility:		
U.S. dollar-denominated Term Loans, net of unamortized debt issuance costs of $1.1 and $1.2	$ 684.7	$ 338.1
Multi-Currency Revolving loan facility net of unamortized debt issuance costs of $0.9 and $1.9	231.5	—
Floating Senior Notes, due 2021, net of unamortized debt issuance costs of $2.0 and $3.2	498.0	496.8
4.375% Senior Notes, due 2023, net of unamortized discount and debt issuance costs of $0.9 and $1.2	249.1	248.8
4.15% Senior Notes, due 2024, net of unamortized debt issuance costs of $5.7 and $7.0	744.3	743.0
4.70% Senior Notes, due 2028, net of unamortized debt issuance costs of $9.2 and $10.3	1,240.8	1,239.7
3.45% Senior Notes, due 2026, net of unamortized debt issuance costs of $1.5 and $1.7	748.5	748.3
Other Borrowings	32.4	42.2
Total	4,429.3	3,856.9
Less - current portion	95.7	64.1
Long-term portion	$ 4,333.6	$ 3,792.8

Senior Notes

On September 14, 2018 in order to fund the GE Acquisition and related fees and expenses, we issued a total of $2.5 billion in aggregate principal amount of unsecured senior notes (in two separate series of fixed rate unsecured senior notes “Senior Notes” and one series of floating rate unsecured senior notes “Floating Senior Notes”). We collectively refer to the Floating Senior Notes and the Senior Notes as the “Notes.” Upon issuance, the Notes were reflected on our Consolidated Balance Sheets net of discount of $2.9 million and net of the capitalized debt issuance costs, including commissions and offering expenses of $18.0 million, both of which will be amortized in interest expense through the respective maturity dates of each series of unsecured senior notes using the effective interest method.

The Floating Senior Notes bear interest at a floating rate equal to the three-month LIBOR rate plus 1.05% per year; the Senior Notes due 2024 bear interest at 4.15% per year; and the Senior Notes due 2028 bear interest at 4.70% per year. The interest rate payable on the Notes will be subject to adjustment based on certain rating events. Interest on the Senior Notes is payable semi-annually in arrears on March 15th and September 15th of each year, commencing on March 15, 2019. Interest on the Floating Senior Notes is payable quarterly in arrears on December 15, March 15, June 15, and September 15 of each year, commencing on December 15, 2018.

The U.K Financial Conduct Authority (the "FCA"), which regulates LIBOR, has announced that the FCA will no longer persuade nor compel banks to submit rates for the calculation of LIBOR after 2021, and the continuation of LIBOR cannot be guaranteed after 2021. The indenture for the Floating Senior Notes provides that upon a permanent discontinuation of LIBOR while the Floating Senior Notes remain outstanding, an alternative reference rate will be used subject to adjustments consistent with industry-accepted practice for such alternative reference rate.

The issuance was comprised of the following three series of notes:

Senior Notes *(in millions)*	**Par Value**	**Discount at Issuance**	**Net Price at Issuance**	**Issuance Cost**	**Net Proceeds**
Floating Senior Notes due 2021	$ 500.0	$ —	$ 500.0	$ 3.5	$ 496.5
4.15% Senior Notes due 2024	750.0	1.5	748.5	7.4	741.1
4.70 Senior Notes due 2028	1,250.0	1.4	1,248.6	10.6	1,238.0
Total	$ 2,500.0	$ 2.9	$ 2,497.1	$ 21.5	$ 2,475.6

Consistent with the Company's existing senior notes, the newly issued 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 indentures under which the Notes were issued contain 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. But the covenants do not require the Company to maintain any financial ratios or specified levels of net worth or liquidity. The Company may redeem each series of the Notes at any time in whole or from time to time in part in accordance with the provisions of the indentured, under which such series of Notes was issued.

Upon the occurrence of a change of control repurchase event with respect to the Notes, each holder of the Notes has the right to require the Company to purchase that holder’s Notes at a price equal to 101% of the principal amount thereof, plus accrued and unpaid interest, unless the Company has exercised its option to redeem all the Notes.

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 increased by 0.25%. The interest rate increase took 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 Notes were issued and expects that these restrictions and covenants will not be any type of limiting factor in executing our operating activities.

Term Loan Agreement

On June 8, 2018, the Company arranged (i) a $350.0 million term loan with proceeds used to refinance existing loans (the “Refinancing Term Loan”), and (ii) a new $400.0 million delayed draw term loan in order to fund the GE Acquisition and related fees and expenses (the “Delayed Draw Term Loan”). The Company collectively refers to the Refinance Term Loans and the Delayed Draw Term Loans as the “Term Loans.”

Consistent with our other debt securities, the Term Loan Agreement includes covenants that, among other things, limit our liens and the liens of certain of our consolidated subsidiaries. In addition, it requires us to maintain the same financial maintenance covenants as discussed below.

Loans under the Term Loan bear interest at a variable rate based on, at the Company’s option, either the ABR rate or the LIBOR rate (each as defined in the Term Loan Agreement) plus an applicable margin that is determined based on our credit ratings or the Company’s ratio of total debt (less unrestricted cash up to $300.0 million) to EBITDA (“Leverage Ratio”). As of December 31, 2019, the applicable margin was 0.375% for base rate loans and 1.375% for Eurodollar rate loans.

Senior Credit Facility

On June 8, 2018, the Company entered into a credit agreement (the “Senior Credit Facility”), which replaced the Company’s then-existing “2016 Refinancing Credit Agreement.” The Senior Credit Facility is with a syndicate of lenders and provides for borrowings consisting of (i) term loans denominated in euros and U.S. dollars; and (ii) a multi-currency revolving loan facility, providing for an equivalent in U.S. dollars of up to $1,200.0 million in multi-currency revolving loans (inclusive of swingline loans of up to $75.0 million and letters of credit of up to $450.0 million).

The multi-currency revolving loan facility will mature on June 8, 2023, and the Term Loans will mature on June 8, 2021. Subject to any mandatory or optional prepayments, the Term Loans are required to be repaid on a quarterly basis in an amount equal to 2.5% of the principal amount drawn, with the final payment due at maturity.

The following table presents availability under our credit facilities:

(in millions)	**Multi-currency revolving loan facility**
Maximum Availability	$ 1,200.0
Outstanding Borrowings	232.0
LC Under Credit Agreement	31.0
Current Availability	$ 938.0

Under the Senior Credit Facility, we can elect to receive advances bearing interest based on either the ABR rate or the LIBOR rate (each as defined in the Credit Agreement) plus an applicable margin that is determined based on our credit ratings or the Company’s Leverage Ratio. As of December 31, 2019, the applicable margin was 0.375% for base rate advances and 1.375% for LIBOR rate advances.

The Company also pays fees related to the Senior Credit Facility. The largest of these fees is a commitment fee on the unused portion of the multi-currency revolving loan facility of 0.10% to 0.30% per annum (currently 0.15% per annum), depending on our credit ratings or Leverage Ratio. None of the fees were material to interest expense.

The obligations under the Senior Credit Facility are guaranteed by Wabtec and each of Wabtec’s wholly owned subsidiaries (collectively, the “Subsidiary Guarantors”). In addition, the Senior Credit Facility contains a number of customary affirmative and negative covenants. In addition to other and customary covenants, the Senior Credit Facility and the Term Loan each require that we maintain the financial covenants listed below as of the end of each fiscal quarter for the period of four fiscal quarters then ended. The Company was in compliance with all of our covenants in the Credit Agreement and the Term Loans as of December 31, 2019.

Interest Coverage Ratio [1]	3.0x
Leverage Ratio [2]	3.25x

1. The interest coverage ratio is defined as EBITDA, as defined in the Credit Agreement and Term Loan Agreement, to net interest expense for the four quarters then ended.
2. The leverage ratio is defined as net debt as of the last day of such fiscal quarter to EBITDA, as defined in the Amendment Credit Agreement and Term Loan Agreement, for the four quarters then ended.

The 2018 Senior Credit Facility contains an uncommitted accordion feature allowing the Company to request the establishment, in an aggregate amount not to exceed $600.0 million, of incremental borrowing commitments under the Revolving Credit Facility or of incremental term loan commitment.

The FCA, which regulates LIBOR, has announced that the FCA will no longer persuade nor compel banks to submit rates for the calculation of LIBOR after 2021, and the continuation of LIBOR cannot be guaranteed after 2021. The Senior Credit Agreement provides that upon a permanent discontinuation of LIBOR, an alternate rate of interest will be established by the administrative agent and the Company giving due consideration to then prevailing U.S. market convention.

At December 31, 2019, the weighted average interest rate on the Company’s variable rate debt was 3.08%.

Cash Pooling

Wabtec aggregates the Company's domestic cash position on a daily basis. Outside the United States, the Company uses cash pooling arrangements with banks to help manage our liquidity requirements. In these pooling arrangements, Wabtec subsidiaries “Participants” agree with a single bank that the cash balances of any of the pool Participants with the bank will be subject to a full right of set-off against amounts other Participants owe the bank, and the bank provides for overdrafts as long as the net balance for all Participants does not exceed an agreed-upon level. Typically, each Participant pays interest on outstanding overdrafts and receives interest on cash balances. The Company's Consolidated Balance Sheets reflect cash, net of bank overdrafts, under all pooling arrangements.

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, 2019:

In millions	**Total**	**Less than 1 year**	**1 - 3 years**	**3 - 5 years**	**More than 5 years**
Operating activities:					
Purchase obligations (1)	$ 387.3	$ 68.4	$ 93.8	$ 217.4	$ 7.7
Operating leases (2)	303.2	53.9	83.4	62.7	103.2
Pension benefit payments (3)	206.5	19.2	39.6	41.4	106.3
Postretirement benefit payments (4)	9.4	1.1	2.1	2.0	4.2
Financing activities:					
Interest payments (5)	945.2	171.9	290.8	222.1	260.4
Long-term debt (6)	4,429.3	95.7	1,109.8	1,234.5	1,989.3
Dividends to shareholders (7)	92.0	92.0	—	—	—
Other:					
Standby letters of credit (8)	714.0	183.5	112.5	152.9	265.1
Total	$ 7,086.9	$ 685.7	$ 1,732.0	$ 1,933.0	$ 2,736.2

(1) Purchase obligations represent non-cancelable contractual obligations at December 31, 2019. In addition, the Company had $1.5 billion of open purchase orders for which the related goods or services had not been 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.

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

(3) 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, expected return on long-term assets and rate of compensation increases. The Company expects to contribute about $10.9 million to pension plan investments in 2020. See further disclosure in Note 10 of the “Notes to Consolidated Financial Statements” included in Part IV, Item 15 of this report.

(4) Annual payments to participants are expected to continue into the foreseeable future at the amounts or ranges noted. Postretirement payments are based on actuarial estimates using current assumptions for discount rates and health care costs.

(5) 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% 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.

(6) Scheduled principal repayments of outstanding loan balances are disclosed in Note 9 of the “Notes to Consolidated 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 $92.0 million.

(8) The $714.0 million of standby letters of credit is comprised of outstanding letters of credit for performance and bid bond purposes, which expire in various dates through 2034. 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 $17.2 million, the timing of which are uncertain. Refer to Note 11 of the “Notes to Consolidated Financial Statements” for additional information on uncertain tax positions.

Obligations for operating activities. The Company has entered into $387.3 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 $16.0 million and $17.0 million in 2019 and 2018, respectively. Benefits paid for post-retirement plans were $0.9 million and $1.0 million in 2019 and in 2018, 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 $92.0 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, 2019, the initial value of performance bonds issued on the Company's behalf is about $619 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 including but not limited to disease outbreak, fires, earthquakes, explosions, floods, tornadoes, hurricanes or weather conditions;
- 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, competition and anti-trust matters or intellectual property claims;
- completion and integration of acquisitions, including the acquisition of 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;

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 18, 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.

Business Combinations:

Description The Company accounts for business acquisitions in accordance with ASC 805, Business Combinations which requires the purchase price of the acquired business to be allocated to tangible and intangible assets acquired and liabilities assumed based on the respective fair values. The amount of purchase price which is in excess of the fair values of assets acquired and liabilities assumed is recognized as goodwill.

Judgments and Uncertainties Discounted cash flow models are used to estimate the fair values of acquired contract backlog, customer relationships, intellectual property intangibles, and below-market customer contract liabilities. The significant assumptions used to estimate the value of the intangible assets and off-market customer contract liabilities included revenue growth rates, projected profit margins, discount rates, royalty rates, customer attrition rates, revenue obsolescence rates and market participant profit margins. These significant assumptions are forward-looking and could be affected by future economic and market conditions.

Effect if Actual Results Differ From Assumptions Different assumptions may result in materially different values for assets acquired and liabilities assumed, which may impact the Company's financial position and future results of operations.

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, 2019, a decline in the terminal growth rate by 50 basis points would decrease fair market value by $794 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 $2,168 million. Even with such changes the fair value of the reporting units would be greater than their net book values. 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 exposed to the expense of increasing our reserves for warranty expense.

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-year performance cycle with the most recently completed cycle being 2017-2019. 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.

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 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. 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 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. Some 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 32% and 22% of total debt at December 31, 2019 and 2018, respectively. On an annual basis, a 1% change in the interest rate for variable rate debt at December 31, 2019, would increase or decrease interest expense by about $14 million.

Foreign Currency Exchange Rate Risk

The Company is exposed 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, 2019, approximately 41% of Wabtec’s net sales were in the United States, 9% in Canada, 6% in India, 5% in the United Kingdom, 4% in Mexico, 4% in Germany, 4% in Australia, 4% in France, 4% in China, and 19% in other international locations. (See Note 21 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, 2019.

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, 2019. 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, 2019, 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 56 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 15, 2020, 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, 2019. 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.wabteccorp.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, 2019 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	588,024	$ 63.36	1,870,396
Equity compensation plans not approved by shareholders	—	—	—
Total	588,024	$ 63.36	1,870,396

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**	
	Management's Reports to Westinghouse Air Brake Technologies Corporation Shareholders	52
	Report of Independent Registered Public Accounting Firm	53
	Report of Independent Registered Public Accounting Firm on Internal Control Over Financial Reporting	56
	Consolidated Balance Sheets as of December 31, 2019 and 2018	57
	Consolidated Statements of Income for the three years ended December 31, 2019, 2018 and 2017	58
	Consolidated Statements of Comprehensive Income for the three years ended December 31, 2019, 2018 and 2017	59
	Consolidated Statements of Cash Flows for the three years ended December 31, 2019, 2018 and 2017	60
	Consolidated Statements of Shareholders' Equity for the three years ended December 31, 2019, 2018 and 2017	61
	Notes to Consolidated Financial Statements	62
(2)	**Financial Statement Schedules**	
	Schedule II—Valuation and Qualifying Accounts	99

		Filing Method
	Exhibits	
2.1	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	16
2.2	Tender Offer Agreement among Faiveley Transport S.A., FW Acquisition, LLC, and Wabtec Corporation dated as of October 6, 2015	16
2.3	Shareholder's Agreement among Financiere Faiveley S.A., FW Acquisition, LLC, and Wabtec Corporation dated as of October 6, 2015	16
2.4	Amendment No. 1 to Share Purchase Agreement among Mr. Erwan Faiveley, Wabtec France, and Wabtec Corporation dated as of October 24, 2016	17
2.5	Amendment No. 1 to Tender Offer Agreement among Faiveley Transport, S.A., Wabtec France, and Wabtec Corporation dated as of October 24, 2016	17
2.6	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	17
2.7**	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.	24
2.8**	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.	24
2.9	Voting and Support Agreement, dated May 20, 2018, among General Electric Company and each of the persons listed on Schedule 1 thereto.	24
2.12	Employee Matters Agreement among General Electric Company, Transportation Systems Holdings Inc., Westinghouse Air Brake Technologies Corporation and Wabtec US Rail, Inc.	28
2.13**	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.	27

2.14**	Amendment to the Separation, Distribution and Sale Agreement, dated January 25, 2019, by and between Westinghouse Air Brake Technologies Corporation and General Electric Company.	27
2.15	Shareholders Agreement between General Electric Company and Westinghouse Air Brake Technologies Corporation.	28
2.16**	Tax Matters Agreement among General Electric Company, Transportation Systems Holdings Inc., Westinghouse Air Brake Technologies Corporation and Wabtec US Rail, Inc.	28
3.1	Restated Certificate of Incorporation of the Company dated January 30, 1995, as amended December 31, 2003	9
3.2	Certificate of Amendment of Restated Certificate of Incorporation dated May 14, 2013	11
3.3	Amended and Restated By-Laws of the Company, effective September 5, 2019	8
3.4	Certificate of Amendment to Restated Certificate of Incorporation dated November 19, 2018	29
3.5	Certificate of Designations of Series A Non-Voting Convertible Preferred Stock of Westinghouse Air Brake Technologies Corporation, dated February 22, 2019	28
4.1	Indenture, dated August 8, 2013 by and between the Company and Wells Fargo, National Association, as Trustee	12
4.2	First Supplemental Indenture, dated August 8, 2013, by and between the Company and Wells Fargo Bank, National Association, as Trustee	12
4.3	Form of 4.375% Senior Note due 2023 (included in Exhibit 4.2)	12
4.4	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	19
4.5	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	19
4.6	Form of 3.450% Senior Note due 2026 (included in Exhibit 4.5)	19
4.7	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	20
4.8	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	21
4.9	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.	22
4.10	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	25
4.11	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	25
4.12	Ninth Supplemental Indenture, dated September 14, 2018, by and among the Company, the guarantors party thereto and Wells Fargo Bank, National Association, as Trustee.	26
4.13	Tenth Supplemental Indenture, date June 6, 2019, by and among the Company, the guarantors party thereto and Wells Fargo Bank, National Association, as Trustee	30
4.14	Description of Wabtec Common Stock registered pursuant to Section 12 of the Securities Act of 1934	1
10.1	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)	2
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
10.4	Westinghouse Air Brake Company 1995 Non-Employee Directors' Fee and Stock Option Plan, as amended and restated*	4
10.5	Westinghouse Air Brake Technologies Corporation 2000 Stock Incentive Plan, as Westinghouse Air Brake Technologies Corporation 2000 Stock Incentive Plan, as amended * *	4

10.6	Employment Agreement with Albert J. Neupaver, dated February 1, 2006 *	3
10.7	Form of Restricted Stock Agreement *	10
10.8	Westinghouse Air Brake Technologies Corporation 2011 Stock Incentive Plan as amended and restated*	5
10.9	Stock Purchase Agreement, by and among the Company, Standard Car Truck Company and Robclif, Inc., dated September 12, 2008	6
10.1	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.	14
10.1	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.	21
10.12	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.	23
10.12	Form of Employment Continuation Agreement entered into by the Company with Albert J. Neupaver, David L. DeNinno, Patrick D. Dugan, Scott E. Wahlstrom, Michael E. Fetsko, and John A Mastalerz Jr.*	7
10.13	Wabtec Corporation Deferred Compensation Plan for Executive Officers and Directors as adopted December 10, 2009 *	10
10.14	Form of Agreement for Nonstatutory Stock Option under the 1995 Non-Employee Directors’ Fee and Stock Option Plan, as amended and restated*	10
10.15	Form of Agreement for Nonstatutory Stock Options under 2000 Stock Incentive Plan, as amended *	10
10.16	Form of Agreement for Nonstatutory Stock Options under 2011 Stock Incentive Plan as amended and restated*	10
10.17	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	25
10.19	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	29
10.20	Separation Agreement between Stephane Rambaud-Measson and Westinghouse Air Brake Technologies Corporation, dated as of February 13, 2019	31
10.21	Transition Agreement between Raymond T. Betler and Westinghouse Air Brake Technologies Corporation, dated as of April 24, 2019	31
10.22	Westinghouse Air Brake Technologies Corporation Summary of Employment Terms of Rafael Santana dated as of February 25, 2019	31
21.0	List of subsidiaries of the Company	1
23.1	Consent of Ernst & Young LLP	1
31.1	Rule 13a-14(a)/15d-14(a) Certifications	1
31.2	Rule 13a-14(a)/15d-14(a) Certifications	1
32.1	Section 1350 Certifications	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
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	1
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	1

104	XBRL Cover Page Interactive Data (embedded within the Inline XBRL document)	1

1 Filed herewith.

2 Filed as an exhibit to the Company’s Registration Statement on Form S-1 (File No. 033-90866).

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. 033-90866) filed on March 31, 2017.

5 Filed as an Annex to the Company’s Schedule 14A Proxy Statement (File No. 033-90866) filed on March 31, 2017.

6 Filed as an exhibit to the Company’s Quarterly Report on Form 10-Q (File No. 033-90866) for the period ended September 30, 2008.

7 Filed as an exhibit to the Company’s Current Report on Form 8-K (File No. 033-90866) dated July 2, 2009.

8 Filed as an exhibit to the Company’s Current Report on Form 8-K (File No. 033-90866), dated September 9, 2019.

9 Filed as an exhibit to the Company’s Annual Report on Form 10-K (File No. 033-90866), dated February 25, 2011.

10 Filed as an exhibit to the Company’s Annual Report on Form 10-K (File No. 033-90866), dated February 22, 2013.

11 Filed as an exhibit to the Company’s Current Report on Form 8-K (File No. 033-90866), dated September 9, 2019.

12 Filed as an exhibit to the Company’s Current Report on Form 8-K (File No. 033-90866), dated August 8, 2013.

13 Filed as an exhibit to the Company’s Annual Report on Form 10-K (File No. 033-90866), dated February 21, 2014.

14 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 033-90866), dated June 24, 2016.

15 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 033-90866), dated July 30, 2015.

16 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 033-90866), dated October 6, 2015.

17 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 033-90866), dated October 26, 2016.

18 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 033-90866), dated November 1, 2016.

19 Filed as an exhibit to the Company's Current Report on Form 8-K (File No. 033-90866), dated November 3, 2016.

20 Filed as an exhibit to the Company’s Annual Report on Form 10-K (File No. 033-90866), dated February 28, 2017.

21 Filed as an exhibit to the Company’s Quarterly Report on Form 10-Q (File No. 033-90866) 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).

23 Filed as an exhibit to the Company’s Quarterly Report on Form 10-Q (File No. 033-90866) for the period ended September 30, 2017.

24 Filed as an exhibit to the Company's Current Report on Form 8-K (File No 033-90866), dated May 24, 2018.

25 Filed as an exhibit to the Company's Quarterly Report on Form 10-Q (File No. 033-90866), for the period ended June 30, 2018.

26 Filed as an exhibit to the Company's Current Report on Form 8-K (File No 033-90866), dated September 14, 2018.

27 Filed as an exhibit to the Company's Current Report on Form 8-K (File No 033-90866), dated January 31, 2019.

28 Filed as an exhibit to the Company's Current Report on Form 8-K (File No 033-90866), dated February 25, 2019.

29 Filed as an exhibit to the Company's Annual Report on Form 10-K (File No 033-90866), dated February 27, 2019.

30 Filed as an exhibit to the Company's Quarterly Report on Form 10-Q (File No. 033-90866), dated August 1, 2019.

31 Filed as an exhibit to the Company's Quarterly Report on Form 10-Q (File No. 033-90866), dated May 9, 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 GE Transportation from its assessment of internal controls over financial reporting as of December 31, 2019 because the Company acquired GE Transportation effective February 25, 2019. GE Transportation is a subsidiary whose total assets and customer revenues represents 61% and 47%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2019.

Based on its assessment, Management has concluded that the Company maintained effective internal control over financial reporting as of December 31, 2019, 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, 2019, 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, 2019 and 2018, the related consolidated statements of income, comprehensive income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2019, 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, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

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, 2019, 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 24, 2020 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 provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgements. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Accounting for Business Combinations

Description of the Matter	As described in Note 3 of the consolidated financial statements, the Company completed its merger with GE Transportation for net consideration of approximately $10.3 billion on February 25, 2019. The transaction was accounted for as a business combination. Auditing the Company's accounting for its merger with GE Transportation was complex due to the significant estimation in determining the fair value of the acquired intangible assets of approximately $3.2 billion, which included contract backlog, customer relationships and intellectual property, and assumed liabilities, which included certain off-market customer contract liabilities totaling $0.5 billion. The significant estimation in determining the fair value of such assets and liabilities was primarily due to the sensitivity of the respective fair values to underlying assumptions. The Company used a discounted cash flow model to estimate the fair values of acquired contract backlog, customer relationships, and intellectual property intangibles and assumed off-market customer contract liabilities. The significant assumptions used to estimate the value of the intangible assets and off-market customer contract liabilities included revenue growth rates, projected profit margins, discount rates, royalty rates, customer attrition rates, revenue obsolescence rates and market participant profit margins. These significant assumptions are forward-looking and could be affected by future economic and market conditions.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of the Company's controls over accounting for acquisitions, including controls over the recognition and measurement of, identifiable intangible assets and off-market customer contract liabilities and management's judgments and evaluation of underlying assumptions with regard to the valuation models applied. We also tested management's controls to validate that the data used in the valuation models was complete and accurate. To test the estimated fair value of the Company's identifiable intangible assets and off-market customer contract liabilities, our audit procedures included, among others, evaluating the Company's selection of the valuation methodology, evaluating the methods and significant assumptions used by the Company's valuation specialist, and evaluating the completeness and accuracy of the underlying data supporting the significant assumptions and estimates. For example, when evaluating the assumptions related to the revenue growth rates, projected profit margins, customer attrition rates, revenue obsolescence rates and market participant profit margins, we compared the assumptions to the past performance of GE Transportation, contractual arrangements that GE Transportation has with customers, the Company's history related to similar acquisitions and third-party industry data where available. We also performed sensitivity analyses of significant assumptions to evaluate the changes in the fair value that would result from changes in the assumptions. When evaluating the assumptions related to discount rates and royalty rates, we compared the assumptions to the Company's history related to similar acquisitions and third-party industry data. We involved a valuation specialist to assist with our evaluation of the methodologies used by the Company and significant assumptions included in the fair value estimates, including the discount rates and royalty rates. Our procedures also included comparison of the selected discount rates to the acquired business's weighted average cost of capital, an evaluation of the relationship of the weighted average cost of capital, internal rate of return and weighted-average return on assets, and consideration of guideline public company benchmarking analyses reflecting the composition of purchase prices for similar transactions.

Over Time Revenue Recognition for Long-Term Contracts

Description of the Matter	As described in Note 2 to the consolidated financial statements, the Company has long-term customer arrangements involving the design and production of highly engineered products that require revenue to be recognized over time. The Company uses input-based measures for determining the amount of revenue, cost and gross margin to recognize over time for these customer arrangements. The input methods used for these arrangements include costs of material and labor. During the year ended December 31, 2019, a material amount of the Company's total revenues were derived from performance obligations that are satisfied over time. Auditing the Company's measurement of revenue recognized over time on long-term contracts is especially challenging because it involves subjective management assumptions regarding the estimated remaining costs of the long-term contract that could span several years. These assumptions could be impacted by the future 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 and may be affected by future market or economic conditions.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested (except for those contracts pertaining to GE Transportation) the operating effectiveness of controls over the Company's process to recognize revenue over time on long-term contracts, including controls over management's review of the significant underlying assumptions described above. Our audit procedures also included, among others, evaluating the significant assumptions and the accuracy and completeness of the underlying data used in management's calculations. This included, for example, inspection of the executed contract and testing management's cost estimates by comparing the inputs to the Company's historical data or experience for similar contracts, the performance of sensitivity analysis and the performance of retrospective review analysis of prior management cost estimates to actual costs incurred for completed contracts. In addition, for a sample of contracts, we involved our construction and engineering specialists to assist in our evaluation of management's cost estimates at completion.

/s/ Ernst & Young LLP
We have served as the Company's auditor since 2002.
Pittsburgh, Pennsylvania
February 24, 2020

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, 2019, 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, 2019, 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 GE Transportation which is included in the 2019 consolidated financial statements of the Company and constituted 61% of total assets as of December 31, 2019 and 47% of revenues 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 GE Transportation.

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, 2019 and 2018, the related consolidated statements of income, comprehensive income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule listed in the Index at Item 15.(2) and our report dated February 24, 2020 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 24, 2020

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
CONSOLIDATED BALANCE SHEETS

In millions, except shares and par value	December 31, 2019	December 31, 2018
Assets		
Current Assets		
Cash and cash equivalents	$ 604.2	$ 580.9
Restricted cash	—	1,761.4
Accounts receivable	1,149.9	801.2
Unbilled accounts receivables	514.0	345.6
Inventories	1,773.1	844.9
Other current assets	150.9	115.6
Total current assets	4,192.1	4,449.6
Property, plant and equipment	2,216.0	1,036.6
Accumulated depreciation	(560.2)	(472.8)
Property, plant and equipment, net	1,655.8	563.8
Other Assets		
Goodwill	8,360.6	2,396.5
Other intangibles, net	4,104.0	1,129.9
Other noncurrent assets	631.7	109.4
Total other assets	13,096.3	3,635.8
Total Assets	$ 18,944.2	$ 8,649.2
Liabilities and Shareholders' Equity		
Current Liabilities		
Accounts payable	$ 1,157.5	$ 589.4
Customer deposits	604.2	373.5
Accrued compensation	343.8	173.2
Accrued warranty	226.5	135.6
Current portion of long-term debt	95.7	64.1
Other accrued liabilities	830.3	310.8
Total current liabilities	3,258.0	1,646.6
Long-term debt	4,333.6	3,792.8
Accrued postretirement and pension benefits	113.0	95.4
Deferred income taxes	145.3	198.3
Contingent consideration	291.8	—
Other long term liabilities	808.9	47.0
Total Liabilities	8,950.6	5,780.1
Commitment and Contingencies (Note 20)		
Equity		
Convertible preferred stock, $.01 par value; 1,000,000 shares authorized, no shares issued and outstanding, at December 31, 2019 and December 31, 2018	—	—
Common stock, $.01 par value; 500,000,000 shares authorized: 226,947,180 and 132,349,534 shares issued and 191,699,193 and 96,614,946 outstanding at December 31, 2019 and December 31, 2018, respectively	2.0	1.3
Additional paid-in capital	7,877.2	914.6
Treasury stock, at cost, 35,247,987 and 35,734,588 shares, at December 31, 2019 and December 31, 2018, respectively	(807.1)	(816.1)
Retained earnings	3,267.0	3,022.0
Accumulated other comprehensive loss	(382.6)	(256.6)
Total Westinghouse Air Brake Technologies Corporation shareholders' equity	9,956.5	2,865.2
Noncontrolling interest	37.1	3.9
Total Equity	9,993.6	2,869.1
Total Liabilities and Equity	$ 18,944.2	$ 8,649.2

The accompanying notes are an integral part of these statements.

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION

CONSOLIDATED STATEMENTS OF INCOME

	Year Ended December 31,		
In millions, except per share data	**2019**	**2018**	**2017**
Net sales			
Sales of goods	$ 6,907.9	$ 4,178.0	$ 3,685.6
Sales of services	1,292.1	185.5	196.1
Total net sales	8,200.0	4,363.5	3,881.7
Cost of sales			
Cost of goods	(5,128.4)	(2,973.5)	(2,667.8)
Cost of services	(793.6)	(156.1)	(148.6)
Total cost of sales	(5,922.0)	(3,129.6)	(2,816.4)
Gross profit	2,278.0	1,233.9	1,065.3
Selling, general and administrative expenses	(1,166.6)	(633.2)	(512.5)
Engineering expenses	(209.9)	(87.5)	(95.2)
Amortization expense	(238.4)	(39.8)	(36.5)
Total operating expenses	(1,614.9)	(760.5)	(644.2)
Income from operations	663.1	473.4	421.1
Other income and expenses			
Interest expense, net	(219.1)	(112.2)	(77.9)
Other income, net	2.8	6.4	8.9
Income from operations before income taxes	446.8	367.6	352.1
Income tax expense	(120.3)	(75.9)	(89.8)
Net income	326.5	291.7	262.3
Less: Net loss attributable to noncontrolling interest	0.2	3.2	—
Net income attributable to Wabtec shareholders	$ 326.7	$ 294.9	$ 262.3
Earnings Per Common Share			
Basic			
Net income attributable to Wabtec shareholders	$ 1.91	$ 3.06	$ 2.74
Diluted			
Net income attributable to Wabtec shareholders	$ 1.84	$ 3.05	$ 2.72
Weighted average shares outstanding			
Basic	170.5	96.0	95.5
Diluted	177.3	96.5	96.1

The accompanying notes are an integral part of these statements.

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
In millions	**2019**	**2018**	**2017**
Net income attributable to Wabtec shareholders	$ 326.7	$ 294.9	$ 262.3
Foreign currency translation (loss) gain	(106.4)	(207.3)	326.1
Unrealized (loss) gain on derivative contracts	(4.3)	(5.3)	9.8
Unrealized (loss) gain on pension benefit plans and post-retirement benefit plans	(21.5)	(3.8)	2.8
Other comprehensive (loss) gain before tax	(132.2)	(216.4)	338.7
Income tax benefit (expense) related to components of other comprehensive loss	6.2	4.8	(4.1)
Other comprehensive (loss) income, net of tax	(126.0)	(211.6)	334.6
Comprehensive income attributable to Wabtec shareholders	$ 200.7	$ 83.3	$ 596.9

The accompanying notes are an integral part of these statements.

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

	December 31,		
In millions	**2019**	**2018**	**2017**
Operating Activities			
Net income	$ 326.5	$ 291.7	$ 262.3
Adjustments to reconcile net income to cash provided by operations:			
Depreciation and amortization	401.4	109.3	103.2
Stock-based compensation expense	50.0	25.3	21.3
Below market intangible amortization	(82.2)	—	—
Deferred income taxes	(27.3)	(5.3)	(67.4)
Loss on disposal of property, plant and equipment	15.9	0.9	1.9
Changes in operating assets and liabilities, net of acquisitions			
Accounts receivable and unbilled accounts receivable	(6.3)	(54.6)	(68.7)
Inventories	255.9	(108.9)	(9.0)
Accounts payable	(144.3)	48.8	(91.7)
Accrued income taxes	10.7	7.9	47.6
Accrued liabilities and customer deposits	(11.9)	31.7	(18.9)
Other assets and liabilities	227.1	(32.1)	8.2
Net cash provided by operating activities	1,015.5	314.7	188.8
Investing Activities			
Purchase of property, plant and equipment	(185.3)	(93.3)	(89.5)
Proceeds from disposal of property, plant and equipment	3.9	11.3	1.3
Acquisitions of business, net of cash acquired	(2,996.4)	(51.2)	(945.3)
Other	—	(14.1)	—
Net cash used for investing activities	(3,177.8)	(147.3)	(1,033.5)
Financing Activities			
Proceeds from debt, net of issuance costs	3,982.4	3,480.7	1,216.7
Payments of debt	(3,423.6)	(1,454.0)	(1,269.5)
Proceeds from exercise of stock options and other benefit plans	0.8	10.0	4.4
Payment of income tax withholding on share-based compensation	(6.3)	(12.3)	(6.8)
Payment of contingent consideration on acquisitions	(10.1)	—	—
Cash dividends	(81.7)	(46.3)	(42.2)
Net cash provided by (used for) financing activities	461.5	1,978.1	(97.4)
Effect of changes in currency exchange rates	(37.3)	(36.6)	32.3
(Decrease) increase in cash	(1,738.1)	2,108.9	(909.8)
Cash, cash equivalents and restricted cash, beginning of year	2,342.3	233.4	1,143.2
Cash, cash equivalents and restricted cash, end of year	$ 604.2	$ 2,342.3	$ 233.4

The accompanying notes are an integral part of these statements.

WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

In millions, except share and per share data	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Treasury Stock Shares	Treasury Stock Amount	Retained Earnings	Accumulated Other Comprehensive Loss	Non-controlling Interest	Total
Balance, December 31, 2016	132,349,534	$ 1.3	$ 870.0	(36,924,102)	$ (839.0)	$ 2,553.3	$ (379.6)	$ 770.8	$ 2,976.8
Cash dividends ($0.44 dividend per share)	—	—	—	—	—	(42.2)	—	—	(42.2)
Proceeds from treasury stock issued from the exercise of stock options and other benefit plans, net of tax	—	—	(7.4)	608,920	5.0	—	—	—	(2.4)
Stock based compensation	—	—	16.7	—	—	—	—	—	16.7
Acquisition of Faiveley Transport noncontrolling interest	—	—	8.9	—	—	—	—	(751.1)	(742.2)
Net income	—	—	—	—	—	262.3	—	—	262.3
Other comprehensive income, net of tax	—	—	—	—	—	—	334.6	—	334.6
Stock issued for Faiveley Transport Acquisition	—	—	18.4	—	6.6	—	—	—	25.0
Balance, December 31, 2017	132,349,534	1.3	906.6	(36,315,182)	(827.4)	2,773.4	(45.0)	19.7	2,828.6
Cash dividends ($0.48 dividend per share)	—	—	—	—	—	(46.3)	—	—	(46.3)
Proceeds from treasury stock issued from the exercise of stock options and other benefit plans, net of tax	—	—	(13.5)	580,594	11.3	—	—	—	(2.2)
Stock based compensation	—	—	21.5	—	—	—	—	—	21.5
Net income (loss)	—	—	—	—	—	294.9	—	(3.2)	291.7
Other comprehensive loss, net of tax	—	—	—	—	—	—	(211.6)	—	(211.6)
Stock issued for Faiveley Transport Acquisition	—	—	—	—	—	—	—	(12.6)	(12.6)
Balance, December 31, 2018	132,349,534	1.3	914.6	(35,734,588)	(816.1)	3,022.0	(256.6)	3.9	2,869.1
Cash dividends ($0.48 dividend per share)	—	—	—	—	—	(81.7)	—	—	(81.7)
Proceeds from treasury stock issued from the exercise of stock options and other benefit plans, net of tax	—	—	(14.6)	486,601	9.0	—	—	—	(5.6)
Stock based compensation	—	—	38.2	—	—	—	—	—	38.2
Net income	—	—	—	—	—	326.7	—	(0.2)	326.5
Other comprehensive loss, net of tax	—	—	—	—	—	—	(126.0)	—	(126.0)
Acquisition of GE Transportation	94,597,646	0.7	6,939.0	—	—	—	—	30.6	6,970.3
Other owner changes	—	—	—	—	—	—	—	2.8	2.8
Balance, December 31, 2019	226,947,180	$ 2.0	$ 7,877.2	(35,247,987)	$ (807.1)	$ 3,267.0	$ (382.6)	$ 37.1	$ 9,993.6

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 locomotives, value-added, technology-based equipment, systems and services for the global freight rail and passenger transit 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 over 50 countries and our products can be found in more than 100 countries throughout the world. In 2019, about 60% of the Company’s net sales 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 $19.9 million and $16.9 million as of December 31, 2019 and 2018, 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 financing lease. The remaining arrangements are treated as operating leases. Right-of-use lease assets are classified as long-term assets under the caption "Other noncurrent assets" and lease liabilities are classified under the captions "Other accrued liabilities' and "Other long-term liabilities."

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 2019, the Company opted to proceed directly to the quantitative impairment test for all reporting units with goodwill. The discounted cash flow approach and the market approach were used to estimate the fair value of each reporting unit using a weighting of 75% and 25%, respectively. The discounted cash flow model requires several assumptions including future sales growth, EBIT (earnings before interest and taxes) margins, capital expenditures, a discount rate and a terminal revenue growth rate (the revenue growth rate for the period beyond the years forecasted by the reporting units) for each reporting unit. 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 material trade names subject to the quantitative impairment test exceeded its respective carrying value, resulting in a conclusion that no material 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.

Equity Method Investments The Company invests in privately-held companies which are accounted for using the equity method. The equity method is applied in situations where the Company has the ability to exercise significant influence, but not control, over the investee. Equity method investments were $95.2 million and $30.8 million at December 31, 2019 and 2018, respectively.

Warranty Costs Warranty costs are accrued based on Management's estimates of repair or upgrade costs per unit and historical experience. Warranty expense was $105.5 million, $58.0 million and $50.4 million for 2019, 2018 and 2017, respectively. Accrued warranty was $267.7 million and $153.7 million at December 31, 2019 and 2018, 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 In the normal course of business, the Company is exposed to interest rate, commodity price and foreign currency exchange rate fluctuations. At times, the Company limits these risks through the use of derivatives such as cross-currency swaps, foreign currency forward contracts, interest rate swaps, commodity forwards and futures. In accordance with the Company's policy, derivatives are only used for hedging purposes. The Company does not use derivatives for trading or speculative purposes. 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 Note 18.

Foreign Currency Translation Certain of our international operations have determined that the local currency is the functional currency whereas others have determined the U.S. dollar is their functional currency. Assets and liabilities of foreign subsidiaries where the functional currency is the local currency 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 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 $13.5 million, $5.7 million and $6.6 million for 2019, 2018 and 2017, 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, 2019 and 2018. Net loss attributable to noncontrolling interests was not material for the years ended December 31, 2019, 2018 and 2017, respectively.

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.

A majority 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.

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. 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 periodically through the year 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. The current portion of the contract assets are classified as current assets under the caption “Unbilled Accounts Receivable” while the noncurrent contract assets are classified as other assets under the caption "Other Noncurrent Assets" on the consolidated balance sheet. Noncurrent contract assets were $109.4 million at December 31, 2019 and were not material at December 31, 2018. Included in noncurrent contract assets are certain costs that are specifically related to a contract, however, do not directly contribute to the transfer of control of the tangible product being created, such as pre-production costs. 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. The current portion of contract liabilities are classified as current liabilities under the caption “Customer Deposits” while the noncurrent contract liabilities are classified as noncurrent liabilities under the caption "Other Long-Term Liabilities" on the consolidated balance sheet. Noncurrent contract liabilities were $77.0 million at December 31, 2019 and were not material at December 31, 2018. 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 $118.5 million and $71.2 million at December 31, 2019 and 2018, 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 process where management reviews the progress of long term-projects periodically throughout the year. 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 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; however, a single contract may have multiple performance obligations comprising multiple promises to customers. When there are multiple performance obligations, revenue is allocated based on the relative stand-alone selling price. 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 the Company typically has include volume discounts, prompt payment discounts, price escalation clauses, 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 the allocated transaction price of unsatisifed or partially unsatisfied performance obligations. As of December 31, 2019, the Company's remaining performance obligations were $21.3 billion. The Company expects to recognize revenue of approximately 25% of remaining performance obligations over the next 12 months, with the remainder recognized thereafter.

SEC regulations require that revenue categories that exceed 10% of total revenue are presented separately on the company's statement of income. As such, the Company has displayed sales of goods and sales of services, and the related cost, in line with those regulations. Additionally, those regulations also require that goods are to include all sales of tangible products, and services must include all other sales. In Note 21 we refer to sales of both goods, such as spare parts and equipment upgrades, and related services, such as monitoring, maintenance and repairs, as sales in our Services product line.

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 $714.0 million and $354.2 million at December 31, 2019 and 2018, 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 $88.0 million and $16.4 million at December 31, 2019 and 2018, respectively.

Significant Customers and Concentrations of Credit Risk The Company's trade receivables are primarily 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 2019, 2018 or 2017.

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.

Engineering Expenses Engineering expenses are charged to expense as incurred. For the years ended December 31, 2019, 2018 and 2017, the Company incurred costs of approximately $209.9 million, $87.5 million, and $95.2 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 12 "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 December 2019, the Financial Accounting Standards Board ("FASB") issued ASU 2019-12, "Income Taxes: Simplifying the Accounting for Income Taxes." The amendments in this update simplify the accounting for certain income tax transactions by removing specific exceptions to the general principles in Topic 740, Income Taxes. This guidance is effective for fiscal years beginning after December 15, 2020 with early adoption permitted. The Company is currently evaluating the potential impact of adopting this guidance on its consolidated financial statements.

In January 2017, the FASB issued Accounting Standards Update ("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. The 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 units' 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, 2019.

In June 2016, FASB issued ASU 2016-13, "Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments." This updated guidance sets forth a current expected credit loss model based on expected losses. Under this model, an entity recognizes an allowance for expected credit losses based on historical experience, current conditions and forecasted information rather than the current methodology of delaying recognition of credit losses until it is probable a loss has been incurred. This guidance is effective for fiscal years beginning after December 15, 2019 with early adoption permitted. The Company has evaluated the potential impact of adopting this guidance on its consolidated financial statements and does not expect the impact of adopting this new standard to be material.

Recently Adopted Accounting Pronouncements In February 2018, FASB issued 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 AOCI 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 became effective for reporting periods beginning after December 15, 2018. The Company adopted this accounting standard at the beginning of the period and elected to not retrospectively apply the new standard. The impact of adopting the new standard was not material to the consolidated statement of income or the consolidated balance sheet.

In February 2016, 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. This guidance became effective for the Company on January 1, 2019. The Company elected the practical expedient which does not require the capitalization of leases with terms of 12 months or less, and the Company did not elect the practical expedient which allows hindsight to be used to determine the term of a lease. The Company adopted the standard using the transition alternative, which allowed 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. For further information regarding the Company's adoption of the new standard, see Note 15.

3. ACQUISITIONS

General Electric Transportation

Wabtec, General Electric Company ("GE"), GE Transportation, a Wabtec company formerly known as 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, 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.

As part of the Merger, 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 (the "Direct Sale"). 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. Following this issuance of additional SpinCo common stock to GE, and immediately prior to the Distribution (as defined below), 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 to its stockholder (the "Distribution"). Immediately after the Distribution, Merger Sub merged with and into SpinCo (the "Merger"), 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, Wabtec issued 46,763,975 shares of common stock to the holders of GE common stock, 19,018,207 shares of common stock to GE and 10,000 shares of preferred stock to GE and made a cash payment to GE of $2.885 billion. As a result and calculated based on Wabtec’s outstanding common stock on a fully-diluted, as-converted and as-exercised basis, as of February 25, 2019, approximately 49.2% of the outstanding shares of Wabtec common stock was held collectively by GE and holders of GE common stock (with 9.9% held by GE directly in shares of Wabtec common stock and 15% underlying the shares of Wabtec convertible preferred stock held by GE) and approximately 50.8% of the outstanding shares of Wabtec common stock would be held by pre-Merger Wabtec stockholders, in each case calculated on a fully-diluted, as-converted and as-exercised basis. Following the Merger, GE also retained 15,000 shares of SpinCo Class A non-voting preferred stock, and Wabtec held 10,000 shares of SpinCo Class B non-voting preferred stock.

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), and Direct Sale Purchaser, which also is Wabtec’s wholly owned subsidiary, 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 and SpinCo, directly or through subsidiaries entered into additional agreements relating to, among other things, intellectual property, employee matters, tax matters, research and development and transition services.

On May 6, 2019, GE completed the sale of approximately 8,780 shares of Wabtec's Series A Preferred stock which converted upon the sale to 25,300,000 shares of Wabtec's common stock. On August 9, 2019, GE completed a sale of the remaining shares of Series A Preferred Stock outstanding which converted to approximately 3,515,500 shares of common stock, as well as 16,969,656 shares of common stock owned directly by GE. Finally, on September 12, 2019, GE completed a sale of all of its remaining shares of common stock of Wabtec, approximately 2,048,515 shares. In conjunction with these secondary offerings, the Company waived the requirements under the shareholders agreement for GE to maintain certain ownership levels of Wabtec's stock following the closing date of the Merger. The Company did not receive any proceeds from the sale of any of these shares.

Total future consideration to be paid by Wabtec to GE includes a fixed payment of $470.0 million, which is directly related to the timing of tax benefits expected to be realized by Wabtec as a result of the acquisition of GE Transportation. This payment is considered contingent consideration because the timing of cash payments to GE is directly related to the future timing of tax benefits received by the Company as a result of the acquisition of GE Transportation. The estimated total value of the consideration to be paid by Wabtec in the acquisition transactions is approximately $10.3 billion, including the cash paid for the Direct Sales Assets, equity transferred for SpinCo, contingent consideration, assumed debt and net of cash acquired. The consideration is based on the Company's closing share price of $73.36 on February 22, 2019 and the fair value of the contingent consideration.

The fair values of the assets acquired and liabilities assumed were determined using the income, cost and market approaches. Discounted cash flow models were used to estimate the fair values of acquired contract backlog, customer relationships, intellectual property intangibles, and below-market customer contracts liabilities. 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, 2019 consolidated balance sheet includes the assets and liabilities of GE Transportation, which have been initially measured at fair value. The noncontrolling interest includes equity interests in GE Transportation's Brazil operations held by third parties on the date of acquisition. At the time of acquisition, quotable market prices of the noncontrolling interest existed; therefore, the noncontrolling interest in the GE Transportation Brazil operations were measured using a Level 1 input. In April 2019, the Company acquired the noncontrolling interest in GE Transportation's Brazil operations for $56.2 million which approximated the fair value assigned to the noncontrolling interest on the date of acquisition. The remaining noncontrolling interest value was determined based on inputs that are not observable in the market and are considered Level 3.

The following table summarizes the preliminary fair value of the GE Transportation assets acquired and liabilities assumed:

In millions		
Assets acquired		
Cash and cash equivalents	$	177.6
Accounts receivable		515.5
Inventories		1,189.2
Other current assets		71.5
Property, plant, and equipment		1,089.6
Goodwill		5,987.5
Trade names		55.0
Customer relationships		550.0
Intellectual property		1,180.0
Backlog		1,440.0
Other noncurrent assets		330.3
Total assets acquired		12,586.2
Liabilities assumed		
Current liabilities		1,587.5
Contingent consideration		440.0
Other noncurrent liabilities		652.9
Total liabilities assumed		2,680.4
Net assets acquired		9,905.8
Noncontrolling interest	$	86.8

These estimates are preliminary in nature; however the Company is in the final stages of completing the purchase price allocation and does not expect the final allocation to differ materially from the preliminary allocation included in the table above. Any necessary adjustments will be finalized within one year from the date of acquisition. During the year ended December 31, 2019, the estimated fair value current liabilities and other noncurrent liabilities decreased $92.1 million and increased $129.1 million, respectively, primarily due to estimate revisions for long term contracts and deferred tax liabilities. The revisions to the initial estimates were based on information that existed at the date of acquisition. Substantially all of the accounts receivable acquired are expected to be collectible. Trade names, customer relationships, patents and backlog intangible assets are all subject to amortization. Contingent liabilities assumed as part of the transaction were not material. The contingent liabilities are related to legal and tax matters. Contingent liabilities are recorded at fair value in purchase accounting, aside from those pertaining to uncertainty in income taxes which are an exception to the fair value basis of accounting. Included in other noncurrent liabilities are approximately $504.7 million of customer contracts whose terms are unfavorable compared to market terms at the date of consummation of the GE Transportation acquisition.

Goodwill was calculated as the difference between the acquisition date fair value of the consideration transferred and the fair value of the net assets acquired, and represents the future economic benefits, including synergies, and assembled workforce, that are expected to be achieved as a result of the consummation of the acquisition of GE Transportation. A majority of the purchased goodwill is expected to be deductible for tax purposes. The goodwill has been allocated to the Freight segment.

Included in the Company's consolidated statement of income for the year ended December 31, 2019 is $3.8 billion of revenues and $358.0 million of operating income from GE Transportation. Costs related to the acquisition of GE Transportation were approximately $63.0 million for the year ended December 31, 2019 and are included in selling, general and administrative expenses on the consolidated statements of income.

Other Acquisitions

The Company made the following acquisition 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 $45.2 million, net of cash acquired and including contingent consideration, resulting in final goodwill of $38.5 million, none of which will be deductible for tax purposes. A payment of $10.1 million was made in the three months ended June 30, 2019 related to contingent consideration associated with the purchase of Annax.

The following table summarizes the final estimated fair value of the assets acquired and liabilities assumed at the date of acquisition for Annax:

	Annax	
In millions	**March 22, 2018**	
Current assets, net of cash acquired	$	32.8
Property, plant & equipment		0.7
Goodwill		38.5
Other intangible assets		11.7
Total assets acquired		83.7
Total liabilities assumed		(55.1)
Net assets acquired	$	28.6

The $11.7 million of total acquired other intangible assets includes $3.8 million assigned to trade names and $7.5 million assigned to customer relationships. The trade names were determined to have indefinite useful lives, while the customer relationships' average useful lives are 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, 2018:

	For the year ended December 31,			
In millions	**2019**		**2018**	
Net sales	$	8,675.6	$	8,030.5
Gross profit		2,528.3		2,102.8
Net income attributable to Wabtec shareholders		485.1		234.8
Diluted earnings per share				
As Reported	$	1.84	$	3.05
Pro forma	$	2.53	$	1.22

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. SUPPLEMENTAL CASH FLOW DISCLOSURES

In millions	Year Ended December 31, 2019	2018	2017
Interest paid during the year	$ 193.1	$ 81.8	$ 75.3
Income taxes paid during the year, net of amount refunded	$ 99.5	$ 83.9	$ 89.4
Business acquisitions:			
Fair value of assets acquired	12,612.9	91.8	452.2
Liabilities assumed	2,466.3	32.9	207.8
Non-controlling interest (acquired) assumed	30.9	—	(761.8)
Stock and cash paid	10,115.7	58.9	1,006.2
Less: Cash acquired	179.6	7.7	35.4
Stock used for acquisition	6,939.7	—	25.5
Net cash paid	$ 2,996.4	$ 51.2	$ 945.3

5. INVENTORIES

The components of inventory, net of reserves, were:

In millions	December 31, 2019	2018
Raw materials	$ 786.4	$ 465.9
Work-in-progress	374.0	154.5
Finished goods	612.7	224.5
Total inventories	$ 1,773.1	$ 844.9

6. PROPERTY, PLANT & EQUIPMENT

The major classes of depreciable assets are as follows:

In millions	December 31, 2019	2018
Machinery and equipment	$ 1,363.8	$ 749.8
Buildings and improvements	774.2	248.1
Land and improvements	78.0	38.7
Property, plant and equipment	2,216.0	1,036.6
Less: accumulated depreciation	(560.2)	(472.8)
Total	$ 1,655.8	$ 563.8

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 $157.8 million, $66.4 million, and $66.7 million for 2019, 2018 and 2017, respectively.

7. 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 lived intangible assets were not impaired at December 31, 2019 and 2018.

The change in the carrying amount of goodwill by segment for the year ended December 31, 2019 is as follows:

In millions	Freight Segment	Transit Segment	Total
Balance at December 31, 2018	$ 899.1	$ 1,497.4	$ 2,396.5
Additions	5,989.3	12.2	6,001.5
Foreign currency impact	(11.8)	(25.6)	(37.4)
Balance at December 31, 2019	$ 6,876.6	$ 1,484.0	$ 8,360.6

As of December 31, 2019 and 2018, the Company's trade names had a net carrying amount of $623.1 million and $582.8 million, respectively, and the Company believes these intangibles have indefinite lives, with the exception of the GE Transportation trade name, to which the Company has assigned a useful life of 5 years.

Intangible assets of the Company, other than goodwill and trade names, consist of the following:

	December 31,	
In millions	2019	2018
Intellectual property, patents, and other intangibles, net of accumulated amortization of $123.8 and $40.1	$ 1,108.9	$ 13.3
Backlog, net of accumulated amortization of $92.0 and $2.0	1,342.1	2.0
Customer relationships, net of accumulated amortization of $212.9 and $158.5	1,029.9	531.8
Total	$ 3,480.9	$ 547.1

The remaining weighted average useful lives of backlog, intellectual property, customer relationships, and other intangibles were 14 years, 9 years, 18 years, and 13 years, respectively. Amortization expense for intangible assets was $238.4 million, $39.8 million, and $36.5 million for the years ended December 31, 2019, 2018, and 2017, respectively.

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

2020	$ 278.7
2021	277.7
2022	277.3
2023	276.8
2024	267.3

8. 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, 2019, and 2018 is as follows:

	Contract Assets	
In millions	**2019**	**2018**
Balance at beginning of year	$ 345.6	$ 366.2
Acquisitions	237.5	0.0
Recognized in current year	619.3	426.8
Reclassified to accounts receivable	(578.6)	(432.3)
Foreign currency impact	(0.4)	(15.1)
Balance at December 31	$ 623.4	$ 345.6

	Contract Liabilities	
In millions	**2019**	**2018**
Balance at beginning of year	$ 444.8	$ 463.7
Acquisitions	333.9	0.0
Recognized in current year	917.5	230.1
Amounts in beginning balance reclassified to revenue	(410.6)	(199.7)
Current year amounts reclassified to revenue	(483.5)	(30.9)
Foreign currency impact	(2.4)	(18.4)
Balance at December 31	$ 799.7	$ 444.8

9. LONG-TERM DEBT

Long-term debt consisted of the following:

In millions	Effective Interest Rate	December 31, 2019 Book Value	December 31, 2019 Fair Value [1]	December 31, 2018 Book Value	December 31, 2018 Fair Value [1]
Senior Credit Facility:					
U.S. dollar-denominated Term Loans, net of unamortized debt issuance costs of $1.1 and $1.2	3.1 %	$ 684.7	$ 684.7	$ 338.1	$ 338.1
Multi-Currency Revolving loan facility net of unamortized debt issuance costs of $0.9 and $1.9	3.4 %	231.5	231.5	—	—
Floating Senior Notes, due 2021, net of unamortized debt issuance costs of $2.0 and $3.2	3.9 %	498.0	500.0	496.8	497.4
4.375% Senior Notes, due 2023, net of unamortized discount and debt issuance costs of $0.9 and $1.2	4.5 %	249.1	263.9	248.8	254.2
4.15% Senior Notes, due 2024, net of unamortized debt issuance costs of $5.7 and $7.0	4.6 %	744.3	805.5	743.0	727.4
4.70% Senior Notes, due 2028, net of unamortized debt issuance costs of $9.2 and $10.3	5.0 %	1,240.8	1,378.3	1,239.7	1,179.6
3.45% Senior Notes, due 2026, net of unamortized debt issuance costs of $1.5 and $1.7	3.5 %	748.5	759.1	748.3	675.1
Other Borrowings		32.4	32.4	42.2	42.2
Total		4,429.3	4,655.4	3,856.9	3,714.0
Less - current portion		95.7	95.7	64.1	64.1
Long-term portion		$ 4,333.6	$ 4,559.7	$ 3,792.8	$ 3,649.9

[1] See Note 19 for information on the fair value measurement of the Company's long-term debt.

As of December 31, 2019, the annual repayment requirements for debt obligations are as follows:

In millions	
2020	$ 95.7
2021	809.8
2022	300.0
2023	479.0
2024	755.5
Thereafter	1,989.3
Total	$ 4,429.3

For those debt securities that have a premium or discount at the time of issuance, the Company amortizes the amount through interest expense based on the maturity date or the first date the holders may require the Company to repurchase the debt securities, if applicable. A premium would result in a decrease in interest expense, and a discount would result in an increase in interest expense in future periods. Additionally, the Company has debt issuance costs related to certain financing transactions which are also amortized through interest expense. As of December 31, 2019 and 2018, the Company had total unamortized debt issuance costs of $21.3 million and $26.5 million, respectively.

Debt Transactions

See Note 3 for further information regarding the Company’s acquisition of GE Transportation.

Senior Notes

On September 14, 2018 in order to fund the GE Acquisition and related fees and expenses, we issued a total of $2.5 billion in aggregate principal amount of unsecured senior notes (in two separate series of fixed rate unsecured senior notes “Senior Notes” and one series of floating rate unsecured senior notes “Floating Senior Notes”). We collectively refer to the Floating Senior Notes and the Senior Notes as the “Notes.” Upon issuance, the Senior Notes and Floating Senior Notes were reflected on our Consolidated Balance Sheets net of discount of $2.9 million and net of the capitalized debt issuance costs, including commissions and offering expenses of $18.0 million, both of which will be amortized in interest expense through the respective maturity dates of each series of unsecured senior notes using the effective interest method.

The Floating Senior Notes bear interest at a floating rate equal to the three-month LIBOR rate plus 1.050% per year; the Senior Notes due 2024 bear interest at 4.150% per year; and the Senior Notes due 2028 bear interest at 4.700% per year. The interest rate payable on the Notes will be subject to adjustment based on certain rating events. Interest on the Senior Notes is payable semi-annually in arrears on March 15th and September 15th of each year, commencing on March 15, 2019. Interest on the Floating Senior Notes is payable quarterly in arrears on December 15, March 15, June 15, and September 15 of each year, which commenced on December 15, 2018.

The issuance was comprised of the following three series of notes:

Senior Notes *(in millions)*		**Par Value**		**Discount at Issuance**		**Net Price at Issuance**		**Issuance Cost**		**Net Proceeds**
Floating Senior Notes due 2021	$	500.0	$	—	$	500.0	$	3.5	$	496.5
4.15% Senior Notes due 2024		750.0		1.5		748.5		7.4		741.1
4.70% Senior Notes due 2028		1,250.0		1.4		1,248.6		10.6		1,238.0
Total	$	2,500.0	$	2.9	$	2,497.1	$	21.5	$	2,475.6

Consistent with the Company's existing senior notes, the newly issued 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 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. But the covenants do not require the Company to maintain any financial ratios or specified levels of net worth or liquidity. The Company may redeem each series of the Notes at any time in whole or from time to time in part in accordance with the provisions of the indenture, under which such series of Notes was issued.

Upon the occurrence of a change of control repurchase event with respect to the Notes, each holder of the Notes has the right to require the Company to purchase that holder’s Notes at a price equal to 101% of the principal amount thereof, plus accrued and unpaid interest, unless the Company has exercised its option to redeem all the Notes.

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 increased by 0.25%. The interest rate increase took 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 Notes were issued and expects that these restrictions and covenants will not be any type of limiting factor in executing our operating activities.

Term Loan Agreement

On June 8, 2018, the Company arranged (i) a $350.0 million term loan with proceeds used to refinance existing loans (the “Refinancing Term Loan”), and (ii) a new $400.0 million delayed draw term loan in order to fund the GE Acquisition and related fees and expenses (the “Delayed Draw Term Loan”). The Company collectively refers to the Refinance Term Loans and the Delayed Draw Term Loans as the “Term Loans.”

Consistent with our other debt securities, the Term Loan Agreement includes covenants that, among other things, limit our liens and the liens of certain of our consolidated subsidiaries. In addition, it requires us to maintain the same financial maintenance covenants as discussed below.

Loans under the Term Loan bear interest at a variable rate based on, at the Company’s option, either the ABR rate or the LIBOR rate (each as defined in the Term Loan Agreement) plus an applicable margin that is determined based on our credit ratings or the Company’s ratio of total debt (less unrestricted cash up to $300.0 million) to EBITDA (“Leverage Ratio”). As of December 31, 2019, the applicable margin was 0.375% for base rate loans and 1.375% for Eurodollar rate loans.

Senior Credit Facility

On June 8, 2018, the Company entered into a credit agreement (the “Senior Credit Facility”), which replaced the Company’s then-existing “2016 Refinancing Credit Agreement.” The Senior Credit Facility is with a syndicate of lenders and provides for borrowings consisting of (i) term loans denominated in euros and U.S. dollars; and (ii) a multi-currency revolving loan facility, providing for an equivalent in U.S. dollars of up to $1,200.0 million in multi-currency revolving loans (inclusive of swingline loans of up to $75.0 million and letters of credit of up to $450.0 million).

The multi-currency revolving loan facility will mature on June 8, 2023, and the Term Loans will mature on June 8, 2021. Subject to any mandatory or optional prepayments, the Term Loans are required to be repaid on a quarterly basis in an amount equal to 2.5% of the principal amount drawn, with the final payment due at maturity.

The following table presents availability under our credit facilities:

(in millions)	**Multi-currency revolving loan facility**
Maximum Availability	$ 1,200.0
Outstanding Borrowings	232.0
Letters of Credit Under Credit Agreement	30.0
Current Availability	$ 938.0

Under the Senior Credit Facility, we can elect to receive advances bearing interest based on either the ABR rate or the LIBOR rate (each as defined in the Credit Agreement) plus an applicable margin that is determined based on our credit ratings or the Company's Leverage Ratio. As of December 31, 2019, the applicable margin was 0.375% for base rate advances and 1.375% for LIBOR rate advances.

The Company also pays fees related to the Senior Credit Facility. The largest of these fees is a commitment fee on the unused portion of the multi-currency revolving loan facility of 0.10% to 0.30% per annum (currently 0.15% per annum), depending on our credit ratings or Leverage Ratio. None of the fees were material to interest expense.

The obligations under the Senior Credit Facility are guaranteed by Wabtec and each of Wabtec's wholly owned subsidiaries (collectively, the "Subsidiary Guarantors"). In addition, the Senior Credit Facility contains a number of customary affirmative and negative covenants. In addition to other and customary covenants, the Senior Credit Facility require that we maintain the financial covenants listed below as of the end of each fiscal quarter for the period of four fiscal quarters then ended. The Company was in compliance with all of our covenants in the Credit Agreement and the Term Loans as of December 31, 2019.

Interest Coverage Ratio [1]	3.0x
Leverage Ratio [2]	3.25x

1. The interest coverage ratio is defined as EBITDA, as defined in the Credit Agreement and Term Loan Agreement, to net interest expense for the four quarters then ended.
2. The leverage ratio is defined as net debt as of the last day of such fiscal quarter to EBITDA, as defined in the Amendment Credit Agreement and Term Loan Agreement, for the four quarters then ended.

The 2018 Senior Credit Facility contains an uncommitted accordion feature allowing the Company to request the establishment, in an aggregate amount not to exceed $600.0 million, of incremental borrowing commitments under the Revolving Credit Facility or of incremental term loan commitment.

At December 31, 2019, the weighted average interest rate on the Company's variable rate debt was 3.08%.

Cash Pooling

Wabtec aggregates the Company's domestic cash position on a daily basis. Outside the United States, the Company uses cash pooling arrangements with banks to help manage our liquidity requirements. In these pooling arrangements, Wabtec subsidiary "Participants" agree with a single bank that the cash balances of any of the pool Participants with the bank will be subject to a full right of set-off against amounts other Participants owe the bank, and the bank provides for overdrafts as long as the net balance for all Participants does not exceed an agreed-upon level. Typically, each Participant pays interest on outstanding overdrafts and receives interest on cash balances. The Company's Consolidated Balance Sheets reflect cash, net of bank overdrafts, under all pooling arrangements.

10. 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 significant defined benefit pension plans summarized by U.S. and international components.

Obligations and Funded Status

	U.S.		International	
In millions	**2019**	**2018**	**2019**	**2018**
Change in projected benefit obligation				
Obligation at beginning of year	$ (39.4)	$ (44.2)	$ (309.2)	$ (353.0)
Service cost	(0.3)	(0.3)	(2.7)	(2.6)
Interest cost	(1.5)	(1.3)	(7.0)	(7.0)
Employee contributions	—	—	(0.5)	(0.4)
Plan settlements and amendments	—	—	4.4	15.2
Benefits paid	3.0	3.5	13.1	13.5
Acquisition	—	—	(5.0)	(0.9)
Actuarial gain (loss)	(2.9)	2.9	(32.4)	6.7
Effect of currency rate changes	—	—	(8.0)	19.3
Obligation at end of year	$ (41.1)	$ (39.4)	$ (347.3)	$ (309.2)
Change in plan assets				
Fair value of plan assets at beginning of year	$ 31.9	$ 37.4	$ 239.4	$ 281.6
Actual return on plan assets	5.3	(2.0)	23.9	(6.9)
Employer contributions	—	—	9.4	10.8
Employee contributions	—	—	0.5	0.4
Benefits paid	(2.9)	(3.5)	(13.1)	(13.5)
Settlements	—	—	(0.4)	(16.6)
Acquisition	—	—	1.2	—
Effect of currency rate changes	—	—	8.9	(16.4)
Fair value of plan assets at end of year	$ 34.3	$ 31.9	$ 269.8	$ 239.4
Funded status				
Fair value of plan assets	$ 34.3	$ 31.9	$ 269.8	$ 239.4
Benefit obligations	(41.1)	(39.4)	(347.3)	(309.2)
Funded status	$ (6.8)	$ (7.5)	$ (77.5)	$ (69.8)
Amounts recognized in the statement of financial position consist of:				
Noncurrent assets	$ —	$ —	$ 11.8	$ 8.9
Current liabilities	—	—	(2.4)	(2.1)
Noncurrent liabilities	(6.9)	(7.5)	(86.9)	(76.6)
Net amount recognized	$ (6.9)	$ (7.5)	$ (77.5)	$ (69.8)
Amounts recognized in accumulated other comprehensive income (loss) consist of:				
Prior service cost	—	—	(1.4)	(1.4)
Net actuarial loss	(18.8)	(20.3)	(78.3)	(58.7)
Net amount recognized	$ (18.8)	$ (20.3)	$ (79.7)	$ (60.1)

The aggregate accumulated benefit obligation for the U.S. pension plans was $40.2 million and $38.8 million as of December 31, 2019 and 2018, respectively. The aggregate accumulated benefit obligation for the international pension plans was $336.0 million and $301.1 million as of December 31, 2019 and 2018, respectively.

	U.S.		International	
In millions	**2019**	**2018**	**2019**	**2018**
Information for pension plans with accumulated benefit obligations in excess of Plan assets:				
Projected benefit obligation	$ (41.1)	$ (39.4)	$ (283.1)	$ (251.0)
Accumulated benefit obligation	(40.2)	(38.8)	(272.6)	(243.6)
Fair value of plan assets	34.3	31.9	193.9	172.3
Information for pension plans with projected benefit obligations in excess of plan assets:				
Projected benefit obligation	$ (41.1)	$ (39.5)	$ (284.4)	$ (251.0)
Fair value of plan assets	34.3	32.0	195.1	172.3

Components of Net Periodic Benefit Costs

	U.S.			International		
In millions	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
Service cost	$ 0.3	$ 0.3	$ 0.3	$ 2.7	$ 2.6	$ 2.7
Interest cost	1.5	1.3	1.4	7.0	7.0	7.3
Expected return on plan assets	(1.7)	(1.8)	(1.7)	(11.8)	(13.5)	(12.4)
Amortization of initial net obligation and prior service cost	—	—	—	0.1	—	—
Amortization of net loss	0.8	1.0	1.0	2.5	2.1	2.8
Settlement and curtailment losses recognized	—	—	—	—	3.1	0.8
Net periodic benefit cost	$ 0.9	$ 0.8	$ 1.0	$ 0.5	$ 1.3	$ 1.2

Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income during 2019 are as follows:

In millions	**U.S.**	**International**
Net gain (loss) arising during the year	$ 0.7	$ (20.3)
Effect of exchange rates	—	(2.1)
Amortization, settlement, or curtailment recognition of net transition obligation	—	0.4
Amortization or curtailment recognition of prior service cost	—	0.1
Amortization or settlement recognition of net loss	0.8	2.5
Total recognized in other comprehensive gain	$ 1.5	$ (19.4)
Total recognized in net periodic benefit cost and other comprehensive gain	$ 0.6	$ (19.9)

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		
	2019	**2018**	**2017**	**2019**	**2018**	**2017**
Discount rate	3.27 %	4.30 %	3.56 %	1.84 %	2.53 %	2.40 %
Expected return on plan assets	5.35 %	5.15 %	4.95 %	5.01 %	5.10 %	5.02 %
Rate of compensation increase	3.00 %	3.00 %	3.00 %	2.64 %	2.61 %	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, 2019, the following table represents the amounts included in other comprehensive loss that are expected to be recognized as components of periodic benefit costs in 2020.

In millions	**U.S.**	**International**
Prior service cost	—	0.1
Net actuarial loss	1.0	4.3
	$ 1.0	$ 4.4

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 19 "Fair Value Measurement" included herein). Plan assets by asset category at December 31, 2019 and 2018 are as follows:

	U.S.		International	
In millions	**2019**	**2018**	**2019**	**2018**
Pension Plan Assets				
Equity security funds	$ 16.4	$ 13.2	$ 70.8	$ 95.1
Debt security funds and other	16.3	17.5	191.3	140.9
Cash and cash equivalents	1.6	1.2	7.7	3.4
Fair value of plan assets	$ 34.3	$ 31.9	$ 269.8	$ 239.4

The U.S. plan has a target asset allocation of 55% equity securities and 45% debt securities. The International plan has a target asset allocation of 26% equity securities, 53% debt securities and 21% 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 19):

	December 31, 2019				
In millions	**NAV**	**Level 1**	**Level 2**	**Level 3**	**Total**
US:					
Equity	$ —	$ 16.4	$ —	$ —	$ 16.4
Debt Securities and other	—	3.5	12.8	—	16.3
Cash and cash equivalents	—	1.5	—	—	1.5
International:					
Equity	$ 4.9	$ 19.9	$ 46.0	$ —	$ 70.8
Debt Securities and other	—	3.1	179.2	—	182.4
Insurance Contracts	—	—	4.3	4.6	8.9
Cash and cash equivalents	—	7.0	0.7	—	7.8
Total	$ 4.9	$ 51.5	$ 243.1	$ 4.6	$ 304.1

	December 31, 2018				
In millions	**NAV**	**Level 1**	**Level 2**	**Level 3**	**Total**
US:					
Equity	$ —	$ 13.2	$ —	$ —	$ 13.2
Debt Securities	—	4.5	13.0	—	17.5
Cash and cash equivalents	—	1.3	—	—	1.3
International:					
Equity	$ 3.7	$ 34.8	$ 56.5	$ —	$ 95.1
Debt Securities	—	—	125.6	—	125.6
Insurance Contracts	—	—	5.4	9.9	15.3
Cash and cash equivalents	—	3.5	—	—	3.5
Total	$ 3.7	$ 57.4	$ 200.5	$ 9.9	$ 271.5

The following table presents a reconciliation of Level 3 assets:

In millions	Total
Balance at December 31, 2017	$ 13.1
Net purchases, issuances, and settlements	(3.6)
Actual return of plan assets	0.3
Transfers	0.7
Effect of currency rate changes	(0.5)
Balance at December 31, 2018	$ 9.9
Net purchases, issuances, and settlements	0.2
Actual return of plan assets	0.3
Transfers	(5.8)
Effect of currency rate changes	—
Balance at December 31, 2019	$ 4.6

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 $2.1 million and $8.8 million to the U.S. and international plans respectively during 2020.

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

In millions	U.S.	International
Year ended December 31,		
2020	$ 3.2	$ 16.0
2021	3.1	16.5
2022	3.0	17.0
2023	3.0	17.7
2024	2.9	17.9
2025 through 2029	13.0	93.4

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:

	For the year ended December 31,		
In millions	2019	2018	2017
Multi-employer pension and health & welfare plans	$ 0.9	$ 1.0	$ 1.5
401(k) savings and other defined contribution plans	55.7	27.9	23.2
Total	$ 56.6	$ 28.8	$ 24.7

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, 2019 and 2018, the plan held on behalf of its participants about 431,744 shares with a market value of $33.6 million, and 442,239 shares with a market value of $31.1 million, respectively. Additionally, the Company has stock option based benefit and other plans further described in Note 13.

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, 2019 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.

In thousands		Pension Protection Act Zone Status (b)		FIP/ RP Status Pending/	Contributions by the Company						Surcharge Imposed	Expiration Dates of Collective Bargaining
Pension Fund	**EIN/PN (a)**	**2019**	**2018**	**Implemented (c)**	**2019**		**2018**		**2017**		**(d)**	**Agreements**
Idaho Operating Engineers-Employers Pension Trust Fund	EIN # 91-6075538 Plan# 001	Green	Green	No	$ 881	(1)	$ 965	(1)	$ 1,020	(1)	No	8/6/2021
				Total Contributions	$ 881		$ 965		$ 1,020			

(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.
(b) The most recent Pension Protection Act Zone Status available for 2019 and 2018 is for plan years that ended in 2019 and 2018, 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 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 2019.
(d) The “Surcharge Imposed” column indicates whether the Company’s contribution rate for 2019 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.

11. 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 fiscal 2018, the Company completed its accounting for the income tax effects of the Tax Act. The Company adjusted the provisional amounts previously recorded in accordance with SEC Staff Accounting Bulletin No. 118. As such, the Company included the following tax provisions in its financial statements for the year ending December 31, 2018:

Revaluation of deferred tax assets and liabilities: The Tax Act reduced 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 fiscal 2018, the Company adjusted its U.S. deferred tax balances which resulted in a benefit of $5.1 million being recorded fiscal 2018. The Company has completed its calculation of the impact of these changes on its deferred tax balances. As of December 31, 2018, the Company 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 during the year ended 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 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 $11.9 million and $9.3 million in its financial statements for the twelve months ended December 31, 2019 and December 31, 2018, respectively.

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 recorded deferred taxes for this item in its financial statements for fiscal year ended December 31, 2019.

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:

	For the year ended December 31,		
In millions	**2019**	**2018**	**2017**
Domestic	$ 117.9	$ 145.1	$ 140.3
Foreign	328.9	222.5	211.8
Income from operations before income taxes	$ 446.8	$ 367.6	$ 352.1

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

	For the year ended December 31,		
In thousands	**2019**	**2018**	**2017**
Current taxes			
Federal	$ 5.7	$ 6.9	$ 86.2
State	0.5	5.8	3.6
Foreign	141.4	68.5	67.4
	147.6	81.2	157.2
Deferred taxes			
Federal	19.8	4.7	(22.9)
State	2.9	1.3	(1.0)
Foreign	(50.0)	(11.3)	(43.5)
	(27.3)	(5.3)	(67.4)
Total provision	$ 120.3	$ 75.9	$ 89.8

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:

	For the year ended December 31,		
In millions	2019	2018	2017
U.S. federal statutory rate	21.0 %	21.0 %	35.0 %
State taxes	0.7	1.6	0.4
Foreign	3.2	0.7	(8.3)
Research and development credit	(1.7)	(1.1)	(0.8)
Manufacturing deduction	—	—	(1.1)
France tax rate change	—	—	(6.5)
U.S. tax rate change	—	(0.6)	(7.9)
U.S. tax reform (benefit) provision	2.0	(1.4)	15.6
Transaction costs related to acquisitions	1.0	—	—
Other, net	0.7	0.4	(0.9)
Effective rate	26.9 %	20.6 %	25.5 %

The increase in the effective tax rate in 2019 is primarily the result of non-deductible transaction related expenses incurred as a result of the acquisition of GE Transportation, a higher earnings mix in higher tax jurisdictions, increased estimated liabilities resulting from provisions of the 2017 Tax Cuts and Jobs Act as well as a benefit from the completion of the accounting for the income tax effects of the Tax Act that was recorded in the tax year ending December 31, 2018.

Components of deferred tax assets and liabilities were as follows:

	December 31,	
In millions	2019	2018
Deferred income tax assets:		
Accrued expenses and reserves	$ 35.8	$ 13.8
Warranty reserve	46.6	25.9
Deferred compensation/employee benefits	32.3	9.8
Right-of-use asset	63.1	—
Pension and postretirement obligations	28.1	19.5
Inventory	25.8	16.8
Net operating loss carry forwards	95.6	85.1
Other	18.8	19.2
Gross deferred income tax assets	346.1	190.1
Valuation allowance	58.0	41.7
Total deferred income tax assets	288.1	148.4
Deferred income tax liabilities:		
Property, plant & equipment	42.7	35.5
Right-of-use liability	63.1	—
Intangibles	235.6	287.4
Total deferred income tax liabilities	341.4	322.9
Net deferred income tax liability	$ (53.3)	$ (174.5)

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, 2019, the valuation allowance for certain foreign deferred tax asset carryforwards was $58.0 million primarily in China, France, the Netherlands, United Kingdom, and South Africa.

Net operating loss carry-forwards in the amount of $390.5 million expire in various periods from December 31, 2019 to December 31, 2039.

As of December 31, 2019, the liability for income taxes associated with unrecognized tax benefits was $17.2 million, of which $17.2 million, if recognized, would favorably affect the Company's effective income tax rate. 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 tax rate. A reconciliation of the beginning and ending amount of the liability for income taxes associated with unrecognized tax benefits follows:

In millions	2019	2018	2017
Gross liability for unrecognized tax benefits at beginning of year	$ 9.5	$ 6.9	$ 8.4
Gross increases - unrecognized tax benefits in prior periods	9.7	5.4	2.5
Gross decreases - audit settlement during year	—	—	(4.0)
Gross decreases - expiration of audit statute of limitations	(2.0)	(2.8)	—
Gross liability for unrecognized tax benefits at end of year	$ 17.2	$ 9.5	$ 6.9

The Company includes interest and penalties related to unrecognized tax benefits in income tax expense. As of December 31, 2019, the total interest and penalties accrued was approximately $4.0 million. As of December 31, 2018, the total interest and penalties accrued was approximately $0.9 million.

With limited exception, the Company is no longer subject to examination by various U.S. and foreign taxing authorities for years before 2014. At this time, the Company believes that it is reasonably possible that unrecognized tax benefits of approximately $7.6 million may change within the next 12 months due to the expiration of statutory review periods and current examinations.

12. EARNINGS PER SHARE

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

	For the Year Ended December 31,		
In millions, except per share data	**2019**	**2018**	**2017**
Numerator			
Numerator for basic and diluted earnings per common share - net income attributable to Wabtec shareholders	$ 326.7	$ 294.9	$ 262.3
Less: dividends declared - common shares and non-vested restricted stock	(80.3)	(46.3)	(42.2)
Undistributed earnings	246.4	248.6	220.1
Percentage allocated to common shareholders (1)	99.7 %	99.7 %	99.7 %
	245.7	247.9	219.4
Add: dividends declared - common shares	80.0	46.3	42.2
Less: dividends declared - preferred shares	(0.4)	—	—
Numerator for basic earnings per common share	$ 325.3	$ 294.2	$ 261.6
Add: dividends declared - preferred shares	0.4	—	—
Numerator for diluted earnings per common share	$ 325.7	$ 294.2	$ 261.6
Denominator			
Denominator for basic earnings per common share - weighted average shares	170.5	96.0	95.5
Effect of dilutive securities:			
Assumed conversion of preferred shares	6.4	—	—
Assumed conversion of dilutive stock-based compensation plans	0.4	0.5	0.6
Denominator for diluted earnings per common share - adjusted weighted average shares and assumed conversion	177.3	96.5	96.1
Net income per common share attributable to Wabtec shareholders			
Basic	$ 1.91	$ 3.06	$ 2.74
Diluted	$ 1.84	$ 3.05	$ 2.72
(1) Basic weighted-average common shares outstanding	170.5	96.0	95.5
Basic weighted-average common shares outstanding and non-vested restricted stock expected to vest	171.0	96.3	95.7
Percentage allocated to common shareholders	99.7 %	99.7 %	99.7 %

Options to purchase approximately 312,000, 135,000, and 24,000 shares of Common Stock were outstanding in 2019, 2018 and 2017, respectively, but were not included in the computation of diluted earnings because their impact would have been antidilutive.

13. STOCK-BASED COMPENSATION PLANS

As of December 31, 2019, 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, 2019 the number of shares available for future grants under the 2011 Plan was 1,870,396 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, 2019, 2018 and 2017, the Company issued a total of 15,729, 12,960 and 16,500 shares of restricted stock to non-employee directors. The total number of shares issued under the plan as of December 31, 2019 was 909,881 shares.

Stock-based compensation expense for all of the plans was $50.0 million, $25.3 million and $21.3 million for the years ended December 31, 2019, 2018 and 2017, respectively. The Company recognized associated tax benefits related to the stock-based compensation plans of $1.4 million, $6.3 million and $8.9 million for the respective periods. Included in the stock-based compensation expense for 2019 above is $2.3 million of expense related to stock options, $20.8 million related to non-vested restricted stock, $9.4 million related to restricted stock units, $16.5 million related to incentive stock units and $1.0 million related to units issued for Directors' fees. At December 31, 2019, unamortized compensation expense related to those stock options, non-vested restricted shares and incentive stock units expected to vest totaled $41.9 million and will be recognized over a weighted period of 1.4 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 three 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 millions)
Outstanding at December 31, 2016	1,098,823	$ 35.39	4.3	$ 52.3
Granted	65,522	86.91		—
Exercised	(166,838)	21.37		(10.0)
Canceled	(13,995)	76.89		(0.1)
Outstanding at December 31, 2017	983,512	$ 32.52	4.0	$ 40.1
Granted	82,580	77.54		—
Exercised	(582,303)	28.29		(24.4)
Canceled	(17,112)	69.76		—
Outstanding at December 31, 2018	466,677	$ 61.04	5.7	$ 4.3
Granted	134,450	70.44		1.0
Exercised	(4,868)	22.45		(0.3)
Canceled	(8,235)	73.00		—
Outstanding at December 31, 2019	588,024	$ 63.36	5.7	$ 8.5
Exercisable at December 31, 2019	383,150	$ 55.25	4.7	$ 8.6

Options outstanding at December 31, 2019 were as follows:

Range of exercise prices	Number of Options Outstanding	Weighted Average Exercise Price of Options Outstanding	Weighted Average Remaining Contractual Life	Number of Options Currently Exercisable	Weighted Average Exercise Price of Options Currently Exercisable
Under $35.00	67,026	$ 28.41	1.1	67,026	$ 28.41
35.00 - 50.00	107,033	41.36	2.6	107,033	41.36
50.00 - 65.00	64,167	61.33	6.1	48,373	61.33
65.00 - 80.00	227,639	71.20	8.1	77,731	59.39
Over 80.00	122,159	88.27	6.5	82,987	87.45
	588,024	$ 63.36		383,150	$ 55.25

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,		
	2019	2018	2017
Dividend yield	0.66 %	0.31 %	0.23 %
Risk-free interest rate	2.6 %	2.8 %	2.2 %
Stock price volatility	25.8 %	23.9 %	23.4 %
Expected life (years)	5.0	5.0	5.0
Weighted average fair value of options granted during the year	$ 19.54	$ 20.59	$ 20.69

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 three 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 Company's estimate for meeting those established performance targets. As of December 31, 2019, the Company estimates that it will achieve 115%, 111% and 108% for the incentive stock units expected to vest based on performance for the three year periods ending December 31, 2019, 2020, and 2021, 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, 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
Granted	608,813	259,950		70.61
Vested	(235,406)	(119,835)		71.65
Adjustment for incentive stock awards expected to vest	—	80,403		78.04
Canceled	(27,465)	(63,758)		74.04
Outstanding at December 31, 2019	791,031	572,002	$	73.64

14. OTHER COMPREHENSIVE LOSS

The components of accumulated other comprehensive loss were:

	December 31,			
In millions		2019		2018
Foreign currency translation gain (loss)	$	(308.6)	$	(202.2)
Unrealized gain (loss) on interest rate swap contracts, net of tax of $0 and $0		(3.3)		(0.1)
Unrealized loss on pension and post-retirement benefit plans, net of tax of $24.7 and $23.0		(70.7)		(54.3)
Total accumulated other comprehensive loss	$	(382.6)	$	(256.6)

The changes in accumulated other comprehensive loss by component, net of tax, for the year-ended December 31, 2019 are as follows:

In millions	Foreign currency translation	Derivative contracts	Pension and post retirement benefits plans	Total
Balance at December 31, 2018	$ (202.2)	$ (0.1)	$ (54.3)	$ (256.6)
Other comprehensive income before reclassifications	(106.4)	(3.2)	(18.5)	(128.1)
Amounts reclassified from accumulated other comprehensive income	—	—	2.1	2.1
Net current period other comprehensive income	(106.4)	(3.2)	(16.4)	(126.0)
Balance at December 31, 2019	$ (308.6)	$ (3.3)	$ (70.7)	$ (382.6)

Reclassifications out of accumulated other comprehensive loss for the year-ended December 31, 2019 are as follows:

In millions	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	$ (1.5)	Other income, net
Amortization of net loss (gain)	4.4	Other income, net
	2.9	Other income, net
	(0.8)	Income tax expense
	$ 2.1	Net income

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

	Foreign currency translation	Derivative contracts	Pension and post retirement benefits plans	Total
Balance at December 31, 2017	$ 5.1	$ 4.0	$ (54.1)	$ (45.0)
Other comprehensive income before reclassifications	(207.3)	(7.8)	(2.3)	(217.4)
Amounts reclassified from accumulated other comprehensive income	—	3.7	2.1	5.8
Net current period other comprehensive income	(207.3)	(4.1)	(0.2)	(211.6)
Balance at December 31, 2018	$ (202.2)	$ (0.1)	$ (54.3)	$ (256.6)

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

	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	$ (1.5)	Other income, net
Amortization of net loss (gain)	4.3	Other income, net
	2.8	Other income, net
	(0.7)	Income tax expense
	$ 2.1	Net income
Derivative contracts		
Realized loss on derivative contracts	4.9	Interest expense, net
	(1.2)	Income tax expense
	$ 3.7	Net income

15. LEASES

During the first quarter of 2019, the Company adopted ASU No. 2016-02, "Leases (Topic 842)," which requires leases with durations greater than twelve months to be recognized on the balance sheet. The Company adopted the standard using the modified retrospective approach with an effective date as of the beginning of our fiscal year, January 1, 2019. Prior year financial statements were not recast under the new standard and, therefore, those amounts are not presented below.

The Company leases property and equipment under finance and operating leases. For leases with terms greater than 12 months, the Company records the related asset and obligation at the present value of lease payments. Many of the Company's leases include rental escalation clauses, renewal options, and/or termination options that are factored into our determination of lease payments when appropriate. The Company does not separate lease and non-lease components. As most of the Company's leases do not provide a readily stated discount rate, the Company must estimate our incremental borrowing rate to discount lease payments. The Company has established discount rates by geographic region ranging from 1.0% to 12.3%.

The components of lease expense are as follows:

In millions		For the year ended Ended December 31, 2019
Operating lease expense	$	54.4
Finance lease expense amortization of leased assets		1.1
Short-term and variable lease expense		0.6
Sublease income		(0.5)
Total	$	55.6

Scheduled payments of lease liabilities are as follows:

In millions		Operating Leases		Finance Leases		Total
2020	$	53.9	$	0.4	$	54.3
2021		45.3		0.2		45.5
2022		38.1		0.2		38.3
2023		33.4		0.2		33.6
2024		29.3		0.1		29.4
Thereafter		103.2		0.2		103.4
Total lease payments		303.2		1.3		304.5
Less: Present value discount		(30.1)		—		(30.1)
Present value lease liabilities	$	273.1	$	1.3	$	274.4

The following table summarizes the remaining lease term and discount rate assumptions used to develop the present value of lease liabilities:

	December 31, 2019
Weighted-average remaining lease term (years)	
Operating leases	7.0
Finance leases	5.2
Weighted-average discount rate	
Operating leases	4.6 %
Finance leases	1.4 %

16. WARRANTIES

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

In millions		2019		2018
Balance at beginning of year	$	153.7	$	153.0
Acquisitions		127.8		3.1
Warranty expense		105.5		58.0
Warranty claim payments		(118.0)		(54.1)
Foreign currency impact		(1.3)		(6.3)
Balance at end of year	$	267.7	$	153.7

17. 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, 2019 and 2018 there was no preferred stock issued or outstanding.

18. DERIVATIVE FINANCIAL INSTRUMENTS AND HEDGING

Hedging Activities In the normal course of business, we are exposed to interest rate, commodity price and foreign currency exchange rate fluctuations. At times, we limit these risks through the use of derivatives such as cross-currency swaps, foreign currency forward contracts, interest rate swaps, commodity forwards and futures. In accordance with our policy, derivatives are only used for hedging purposes. We do not use derivatives for trading or speculative purposes.

Foreign Currency Exchange Risk

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, 2019, 2018 and 2017, the amounts reclassified into income were not material.

The Company has established revenue hedging, balance sheet risk management and net investment hedging programs to protect against volatility of future foreign currency cash flows and changes in fair value caused by volatility in foreign exchange rates. We conduct our business worldwide in U.S. dollars and the functional currencies of our foreign subsidiaries, including Euro, Indian rupee, British pound sterling, Australian dollars and several other foreign currencies. Changes in foreign currency exchange rates could have a material adverse impact on our financial results that are reported in U.S. dollars. We are also exposed to foreign currency exchange rate risk related to our foreign subsidiaries, including intercompany loans denominated in non-functional currencies and net purchases and sales in non-functional currencies. We have certain foreign currency exchange rate risk programs that use foreign currency forward contracts and cross-currency swaps. These forward contracts and cross-currency swaps are generally used to offset the potential income statement effects from intercompany loans denominated in non-functional currencies. In addition, 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. These programs reduce but do not entirely eliminate foreign currency exchange rate risk.

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 twelve months ended December 31, 2019 the amounts reclassified into income were not material.

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 gain related to these contracts was $1.6 million for the three months ended December 31, 2019. 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, 2019:

	Fair Value		Gross Notional Amount	
In millions	**Designated**	**Non-Designated**	**Designated**	**Non-Designated**
Foreign Exchange Contracts				
Other current assets	$ 11.2	$ 1.4	$ 2,429.0	$ 412.9
Other current liabilities	(9.8)	—	1,184.6	—
Cross-currency Swaps				
Other current assets	—	—	—	—
Other current liabilities	(9.4)	—	560.8	—
Total	$ (8.0)	$ 1.4	$ 4,174.4	$ 412.9

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

	Fair Value		Gross Notional Amount	
In millions	**Designated**	**Non-Designated**	**Designated**	**Non-Designated**
Foreign Exchange Contracts				
Other current assets	$ —	$ 1.3	$ —	$ 834.0
Other current liabilities	(2.3)	—	863.0	—
Cross-currency Swaps				
Other current assets	—	—	—	—
Other current liabilities	—	—	—	—
Total	$ (2.3)	$ 1.3	$ 863.0	$ 834.0

Interest Rate Risk

The Company may use interest rate swap contracts on certain investing and borrowing transactions to manage its net exposure to interest rate changes and to reduce its overall cost of borrowing. The Company does not use leveraged swaps and, in general, does not leverage any of its investment activities that would put principal capital at risk. For the twelve months ended December 31, 2019 the amounts reclassified into income were not material.

Commodity Price Risk

The Company may use commodity forward contracts and futures to manage its exposure to commodity price changes and to reduce its overall cost of manufacturing. For the twelve months ended December 31, 2019 the amounts reclassified into income were not material.

19. 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 assets and liabilities carried at fair value measured on a recurring basis as of December 31, 2019, which are included in other current assets and liabilities on the Consolidated Balance sheet:

		Fair Value Measurements at December 31, 2019 Using		
In millions	**Total Carrying Value at December 31, 2019**	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Foreign Exchange Contracts				
Other Current Assets	12.6	—	12.6	—
Other Current Liabilities	9.8	—	9.8	—
Cross-Currency Swap Agreement				
Other Current Liabilities	9.4	—	9.4	—

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, 2019 and December 31, 2018. 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.

20. 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 the vast majority of the 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 of 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. A limited number of claims are not covered by insurance, nor are they subject to indemnity from non-affiliated parties. Wabtec has incurred defense, administrative and indemnity costs in connection with these actions, but these costs have not been material, and the Company has no information that would suggest these costs would become material in the foreseeable future. Based on the Company's history in resolving all asbestos claims over the last twenty years, Management believes that the costs of the Company's asbestos-related cases will not be material to the Company's overall financial position, results of operations and cash flows.

On April 21, 2016, Siemens Industry, Inc. filed a lawsuit against the Company in federal district court in Delaware alleging that the Company infringed seven patents owned by Siemens related to the Company's Positive Train Control (PTC) technology. On November 2, 2016, Siemens amended its complaint to add six additional patents they also claimed were infringed by the Company's PTC Products or End of Train (EOT) Products (Siemens Patent Case). The Company filed Answers, and asserted counterclaims, in response to Siemens' complaints. Additionally, after filings by the Company, the US Patent & Trademark Office's Patent Trail and Appeal Board (PTAB) granted Inter-Parties Review (IPR) proceedings on eight (8) 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. On August 15, 2019, the Court entered a final judgement in the amount of $14.1 million in favor of Siemens, which included post-discovery damages on all Wabtec PTC and EOT sales through July 2019. Both parties appealed the Final Judgement. On September 27, 2019, the parties entered into a global settlement agreement, settling all on-going litigation between them, as part of the patent litigation including antitrust claims Siemens had made against Wabtec initially.

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 has successfully completed a remediation 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 eliminated 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; a jury trial is scheduled to begin in May 2020. DTC's complaint generally supports Xorail's position and does not name or implicate Xorail; DTC has not updated its notices against Xorail, nor have they filed any formal claim against Xorail.

On April 3, 2018, the Company and Knorr-Bremse AG entered into a consent decree with the United States Department of Justice 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. No monetary fines or penalties were 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 thereafter were filed in several different federal district courts naming the Company and Knorr as defendants in connection with the allegations contained in the 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 consolidated 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. On August 13, 2019, the Company was notified that co-defendant Knorr-Bremse settled with plaintiffs. On January 21, 2020, following Court-sponsored early mediation, the Company entered into a Memorandum of Understanding with plaintiffs, agreeing to settle all claims in the case. The parties intend to seek Court approval of the agreed settlement terms and amount.

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.

21. SEGMENT INFORMATION

The Company 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. Initiatives to integrate GE Transportation operations into Wabtec including recent restructuring programs announced in late 2019 resulted in changes to the Company's organizational structure and the financial reporting utilized by the Company's chief operating decision maker to assess performance and allocate resources; as a result, certain asset groups were reorganized from the Freight Segment to the Transit Segment and vice versa. The change in the Company's reportable segments was effective in the fourth quarter of 2019 and is reflected below in 2019 and through the retrospective revision of 2018 and 2017 segment information. The Company believes these changes better present Management's new view of the business. The Company's business segments are:

Freight Segment primarily builds new locomotives, manufactures and services components for new and existing freight cars and 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, 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. The changes to the asset groups comprising the Freight and Transit segments have been reflected through retrospective revision of prior period segment information.

Segment financial information for 2019 is as follows:

In million	Freight Segment	Transit Segment	Corporate Activities and Elimination	Total
Sales to external customers	$ 5,441.4	$ 2,758.6	$ —	$ 8,200.0
Intersegment sales/(elimination)	59.6	23.4	(83.0)	—
Total sales	$ 5,501.0	$ 2,782.0	$ (83.0)	$ 8,200.0
Income (loss) from operations	$ 642.9	$ 214.4	$ (194.2)	$ 663.1
Interest expense and other, net	—	—	(216.3)	(216.3)
Income (loss) from operations before income taxes	$ 642.9	$ 214.4	$ (410.5)	$ 446.8
Depreciation and amortization	$ 330.4	$ 62.2	$ 8.8	$ 401.4
Capital expenditures	105.1	63.7	16.5	185.3
Segment assets	14,450.9	6,026.0	(1,532.7)	18,944.2

Segment financial information for 2018 is as follows:

In millions	Freight Segment	Transit Segment	Corporate Activities and Elimination	Total
Sales to external customers	$ 1,766.4	$ 2,597.1	$ —	$ 4,363.5
Intersegment sales/(elimination)	52.8	11.3	(64.1)	—
Total sales	$ 1,819.2	$ 2,608.4	$ (64.1)	$ 4,363.5
Income (loss) from operations	$ 334.3	$ 192.5	$ (53.4)	$ 473.4
Interest expense and other, net	—	—	(105.8)	(105.8)
Income (loss) from operations before income taxes	$ 334.3	$ 192.5	$ (159.2)	$ 367.6
Depreciation and amortization	$ 41.6	$ 62.7	$ 5.0	$ 109.3
Capital expenditures	24.6	61.6	7.1	93.3
Segment assets	3,329.6	9,478.6	(4,159.0)	8,649.2

Segment financial information for 2017 is as follows:

In millions	Freight Segment	Transit Segment	Corporate Activities and Elimination	Total
Sales to external customers	$ 1,538.6	$ 2,343.1	$ —	$ 3,881.7
Intersegment sales/(elimination)	39.0	5.5	(44.5)	—
Total sales	$ 1,577.6	$ 2,348.6	$ (44.5)	$ 3,881.7
Income (loss) from operations	$ 271.7	$ 177.2	$ (27.8)	$ 421.1
Interest expense and other, net	—	—	(69.0)	(69.0)
Income (loss) from operations before income taxes	$ 271.7	$ 177.2	$ (96.8)	$ 352.1
Depreciation and amortization	$ 43.1	$ 58.0	$ 2.1	$ 103.2
Capital expenditures	32.2	52.5	4.8	89.5
Segment assets	3,104.9	7,885.3	(4,410.2)	6,580.0

The following geographic area data as of and for the years ended December 31, 2019, 2018 and 2017, 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:

	Net Sales			Long-Lived Assets		
In millions	2019	2018	2017	2019	2018	2017
United States	$ 3,381.0	$ 1,460.3	$ 1,323.8	$ 1,089.8	$ 204.3	$ 211.6
Canada	733.3	279.0	279.0	13.2	5.3	5.8
India	504.2	178.5	137.8	159.2	12.8	12.5
United Kingdom	376.2	395.8	356.5	55.5	54.8	57.7
Mexico	356.6	200.6	160.0	23.7	9.2	9.1
Germany	340.0	314.7	208.8	77.7	75.5	71.7
Australia	296.4	173.5	136.1	12.1	9.6	10.5
France	294.3	247.8	237.5	58.9	56.7	57.8
China	290.4	170.3	178.1	34.5	33.4	36.4
Other international	1,627.6	943.0	864.1	131.2	102.2	100.9
Total	$ 8,200.0	$ 4,363.5	$ 3,881.7	$ 1,655.8	$ 563.8	$ 574.0

Export sales from the Company’s United States operations were $905.2 million, $512.5 million and $448.0 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Net sales by product line are as follows:

In millions	2019	2018	2017
Freight Segment:			
Equipment	$ 1,699.7	$ —	$ —
Components	1,073.5	1,169.1	1,004.6
Digital Electronics	677.1	474.1	400.8
Services	1,991.1	123.2	133.2
Total Freight Segment sales	$ 5,441.4	$ 1,766.4	$ 1,538.6
Transit Segment:			
Original Equipment Manufacturer	1,286.6	1,194.0	1,050.0
Aftermarket	1,472.0	1,403.1	1,293.1
Total Transit Segment sales	$ 2,758.6	$ 2,597.1	$ 2,343.1

22. GUARANTOR SUBSIDIARIES FINANCIAL INFORMATION

The obligations under the Company's Senior Notes and Senior Credit Facility are fully and unconditionally guaranteed by certain of the Company's U.S. subsidiaries as guarantors. Each guarantor is 100% owned by the parent company, with the exception of GE Transportation, a Wabtec company, which has 15,000 shares outstanding of Class A non-voting preferred stock held by General Electric 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, 2019:

In millions	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Cash, cash equivalents, and restricted cash	$ 24.0	$ 14.7	$ 565.5	$ —	$ 604.2
Receivables, net	103.5	298.2	1,262.2	—	1,663.9
Inventories	135.3	763.1	874.7	—	1,773.1
Current assets - other	(0.8)	22.0	129.7	—	150.9
Total current assets	262.0	1,098.0	2,832.1	—	4,192.1
Property, plant and equipment	73.2	65.0	1,517.6	—	1,655.8
Goodwill	564.1	283.2	7,513.3	—	8,360.6
Investment in subsidiaries	15,566.2	6,583.9	—	(22,150.1)	—
Other intangibles, net	35.8	731.2	3,337.0	—	4,104.0
Other long term assets	105.6	116.2	409.9	—	631.7
Total assets	$ 16,606.9	$ 8,877.5	$ 15,609.9	$ (22,150.1)	$ 18,944.2
Current liabilities	$ 586.0	$ 1,109.6	$ 1,562.4	$ —	$ 3,258.0
Inter-company	1,357.6	(2,546.3)	1,188.7	—	—
Long-term debt	4,321.8	—	11.8	—	4,333.6
Long-term liabilities - other	385.0	154.1	819.9	—	1,359.0
Total liabilities	6,650.4	(1,282.6)	3,582.8	—	8,950.6
Shareholders' equity	9,941.5	10,160.1	12,005.0	(22,150.1)	9,956.5
Non-controlling interest	15.0	—	22.1	—	37.1
Total shareholders' equity	$ 9,956.5	$ 10,160.1	$ 12,027.1	$ (22,150.1)	$ 9,993.6
Total Liabilities and Shareholders' Equity	$ 16,606.9	$ 8,877.5	$ 15,609.9	$ (22,150.1)	$ 18,944.2

Balance Sheet for December 31, 2018:

In millions	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Cash and cash equivalents	$ 1,782.6	$ (0.1)	$ 559.8	$ —	$ 2,342.3
Receivables, net	106.8	61.5	978.5	—	1,146.8
Inventories	149.7	69.1	626.1	—	844.9
Current assets - other	11.9	0.7	103.0	—	115.6
Total current assets	2,051.0	131.2	2,267.4	—	4,449.6
Property, plant and equipment	51.6	24.8	487.4	—	563.8
Goodwill	25.3	283.2	2,088.0	—	2,396.5
Investment in subsidiaries	6,708.0	4,022.1	—	(10,730.1)	—
Other intangibles, net	29.3	78.5	1,022.1	—	1,129.9
Other long term assets	8.8	0.1	100.5	—	109.4
Total assets	$ 8,874.0	$ 4,539.9	$ 5,965.4	$ (10,730.1)	$ 8,649.2
Current liabilities	$ 264.5	$ 91.0	$ 1,291.1	$ —	$ 1,646.6
Inter-company	1,947.5	(1,436.2)	(511.3)	—	—
Long-term debt	3,779.7	—	13.1	—	3,792.8
Long-term liabilities - other	17.1	48.6	275.0	—	340.7
Total liabilities	6,008.8	(1,296.6)	1,067.9	—	5,780.1
Shareholders' equity	2,865.2	5,836.5	4,893.6	(10,730.1)	2,865.2
Non-controlling interest	—	—	3.9	—	3.9
Total shareholders' equity	$ 2,865.2	$ 5,836.5	$ 4,897.5	$ (10,730.1)	$ 2,869.1
Total Liabilities and Shareholders' Equity	$ 8,874.0	$ 4,539.9	$ 5,965.4	$ (10,730.1)	$ 8,649.2

Income Statement for the Year Ended December 31, 2019:

In millions	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net sales	$ 723.4	$ 3,245.3	$ 5,766.3	$ (1,535.0)	$ 8,200.0
Cost of sales	(562.1)	(2,429.2)	(4,129.4)	1,198.7	(5,922.0)
Gross profit (loss)	161.3	816.1	1,636.9	(336.3)	2,278.0
Total operating expenses	(321.6)	(311.5)	(981.8)	—	(1,614.9)
Income (loss) from operations	(160.3)	504.6	655.1	(336.3)	663.1
Interest (expense) income, net	(214.8)	12.5	(16.8)	—	(219.1)
Other (expense) income, net	(131.5)	(11.1)	145.4	—	2.8
Equity earnings (loss)	809.5	613.4	—	(1,422.9)	—
Pretax income (loss)	302.9	1,119.4	783.7	(1,759.2)	446.8
Income tax expense	23.8	(97.0)	(47.1)	—	(120.3)
Net income (loss)	326.7	1,022.4	736.6	(1,759.2)	326.5
Less: Net loss attributable to noncontrolling interest	—	—	0.2	—	0.2
Net income (loss) attributable to Wabtec shareholders	$ 326.7	$ 1,022.4	$ 736.8	$ (1,759.2)	$ 326.7
Comprehensive income (loss) attributable to Wabtec shareholders	$ 326.7	$ 1,022.4	$ 610.8	$ (1,759.2)	$ 200.7

Income Statement for the Year Ended December 31, 2018:

In millions	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net sales	$ 671.0	$ 483.1	$ 3,442.2	$ (232.8)	$ 4,363.5
Cost of sales	(495.1)	(304.3)	(2,462.5)	132.3	(3,129.6)
Gross profit (loss)	175.9	178.8	979.7	(100.5)	1,233.9
Total operating expenses	(173.0)	(57.3)	(530.2)	—	(760.5)
Income (loss) from operations	2.9	121.5	449.5	(100.5)	473.4
Interest (expense) income, net	(110.8)	12.8	(14.2)	—	(112.2)
Other income (expense), net	13.5	—	(7.1)	—	6.4
Equity earnings (loss)	396.9	369.4	—	(766.3)	—
Pretax income (loss)	302.5	503.7	428.2	(866.8)	367.6
Income tax expense	(7.6)	(3.3)	(65.0)	—	(75.9)
Net income (loss)	294.9	500.4	363.2	(866.8)	291.7
Less: Net loss attributable to noncontrolling interest	—	—	3.2	—	3.2
Net income (loss) attributable to Wabtec shareholders	$ 294.9	$ 500.4	$ 366.4	$ (866.8)	$ 294.9
Comprehensive income (loss) attributable to Wabtec shareholders	$ 295.8	$ 500.4	$ 153.9	$ (866.8)	$ 83.3

Income Statement for the Year Ended December 31, 2017:

In millions	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net sales	$ 577.4	$ 398.2	$ 3,035.4	$ (129.3)	$ 3,881.7
Cost of sales	(440.9)	(255.8)	(2,218.4)	98.7	(2,816.4)
Gross profit (loss)	136.5	142.4	817.0	(30.6)	1,065.3
Total operating expenses	(114.2)	(50.9)	(479.1)	—	(644.2)
Income (loss) from operations	22.3	91.5	337.9	(30.6)	421.1
Interest (expense) income, net	(76.8)	10.9	(12.0)	—	(77.9)
Other income (expense), net	10.0	0.3	(1.4)	—	8.9
Equity earnings (loss)	416.1	317.6	—	(733.7)	—
Pretax income (loss)	371.6	420.3	324.5	(764.3)	352.1
Income tax (expense) benefit	(109.3)	18.8	0.7	—	(89.8)
Net income (loss)	262.3	439.1	325.2	(764.3)	262.3
Less: Net income attributable to noncontrolling interest	—	—	—	—	—
Net income (loss) attributable to Wabtec shareholders	$ 262.3	$ 439.1	$ 325.2	$ (764.3)	$ 262.3
Comprehensive income (loss) attributable to Wabtec shareholders	$ 263.9	$ 439.1	$ 658.2	$ (764.3)	$ 596.9

Condensed Statement of Cash Flows for the year ended December 31, 2019:

In millions	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net cash (used in) provided by operating activities	$ (321.2)	$ 419.4	$ 1,253.6	$ (336.3)	$ 1,015.5
Net cash provided by (used for) investing activities	6,849.3	(1,140.5)	(8,886.6)	—	(3,177.8)
Net cash (used in) provided by financing activities	(8,286.7)	735.9	7,676.0	336.3	461.5
Effect of changes in currency exchange rates	—	—	(37.3)	—	(37.3)
(Decrease) increase in cash	(1,758.6)	14.8	5.7	—	(1,738.1)
Cash and cash equivalents, beginning of year	1,782.6	(0.1)	559.8	—	2,342.3
Cash, cash equivalents, and restricted cash, end of year	$ 24.0	$ 14.7	$ 565.5	$ —	$ 604.2

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

In millions	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net cash (used in) provided by operating activities	$ (87.2)	$ 130.1	$ 372.3	$ (100.5)	$ 314.7
Net cash used in investing activities	(16.8)	(2.0)	(128.5)	—	(147.3)
Net cash provided by (used in) financing activities	1,885.7	(128.8)	120.7	100.5	1,978.1
Effect of changes in currency exchange rates	—	—	(36.6)	—	(36.6)
Increase (decrease) in cash	1,781.7	(0.7)	327.9	—	2,108.9
Cash and cash equivalents, beginning of year	0.9	0.6	231.9	—	233.4
Cash, cash equivalents, and restricted cash, end of year	$ 1,782.6	$ (0.1)	$ 559.8	$ —	$ 2,342.3

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

In millions	Parent	Guarantors	Non-Guarantors	Elimination	Consolidated
Net cash (used in) provided by operating activities	$ (49.2)	$ 130.3	$ 138.3	$ (30.6)	$ 188.8
Net cash used in investing activities	(11.2)	(3.4)	(1,018.9)	—	(1,033.5)
Net cash provided by (used in) financing activities	58.8	(127.5)	(59.3)	30.6	(97.4)
Effect of changes in currency exchange rates	—	—	32.3	—	32.3
(Decrease) increase in cash	(1.6)	(0.6)	(907.6)	—	(909.8)
Cash, cash equivalents, and restricted cash, beginning of year	2.5	1.2	1,139.5	—	1,143.2
Cash and cash equivalents, end of year	$ 0.9	$ 0.6	$ 231.9	$ —	$ 233.4

23. OTHER INCOME, NET

The components of other income, net are as follows:

	For the year ended December 31,		
In millions	2019	2018	2017
Foreign currency loss	$ (13.5)	$ (5.7)	$ (6.6)
Equity income	8.1	1.9	2.6
Expected return on pension assets/amortization	9.9	9.0	9.8
Other miscellaneous (expense) income	(1.7)	1.2	3.1
Total other income, net	$ 2.8	$ 6.4	$ 8.9

24. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

In millions, except per share data	**First Quarter**	**Second Quarter**	**Third Quarter**	**Fourth Quarter**
2019				
Net sales	$ 1,593.6	$ 2,236.3	$ 2,001.7	$ 2,368.4
Gross profit	389.0	614.7	599.4	674.9
Income from operations	67.3	200.6	169.1	226.1
Net (loss) income attributable to Wabtec shareholders	(4.2)	104.1	91.1	135.7
Basic (loss) earnings from operations per common share	$ (0.04)	$ 0.58	$ 0.48	$ 0.71
Diluted (loss) earnings from operations per common share	$ (0.04)	$ 0.54	$ 0.48	$ 0.71
2018				
Net sales	$ 1,056.2	$ 1,111.7	$ 1,077.8	$ 1,117.8
Gross profit	310.9	324.0	302.0	297.0
Income from operations	131.3	123.5	125.2	93.4
Net income attributable to Wabtec shareholders	88.4	84.4	87.7	34.4
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

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 millions	Balance at beginning of period	Charged/ (credited) to expense	Charged/ (credited) to other accounts (1)	Deductions from reserves (2)	Balance at end of period
2019					
Allowance for doubtful accounts	$ 16.9	$ 7.1	$ 0.2	$ 4.5	$ 19.9
Valuation allowance-taxes	41.8	16.2	—	—	58.0
2018					
Allowance for doubtful accounts	$ 12.3	$ 9.5	$ (0.4)	$ 4.5	$ 16.9
Valuation allowance-taxes	25.7	27.4	—	11.3	41.8
2017					
Allowance for doubtful accounts	$ 7.3	$ 2.6	$ 5.0	$ 2.6	$ 12.3
Valuation allowance-taxes	21.4	4.3	—	—	25.7

(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.

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 24, 2020

By: /S/ RAFAEL SANTANA

Rafael Santana,
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 24, 2020
By	/S/ RAFAEL SANTANA **Rafael Santana** **President and Chief Executive Officer and Director (Principal Executive Officer)**	February 24, 2020
By	/S/ PATRICK D. DUGAN **Patrick D. Dugan,** **Executive Vice President Finance and Chief Financial Officer (Principal Financial Officer)**	February 24, 2020
By	/S/ JOHN A. MASTALERZ **John A. Mastalerz,** **Senior Vice President and Principal Accounting Officer**	February 24, 2020
By	/S/ WILLIAM E. KASSLING **William E. Kassling,** **Lead Director**	February 24, 2020
By	/S/ PHILIPPE ALFROID **Philippe Alfroid,** **Director**	February 24, 2020
By	/S/ ERWAN FAIVELEY **Erwan Faiveley,** **Director**	February 24, 2020
By	/S/ EMILIO A. FERNANDEZ **Emilio A. Fernandez,** **Director**	February 24, 2020
By	/S/ LEE B. FOSTER, II **Lee B. Foster, II,** **Director**	February 24, 2020

By	/s/ Linda S. Harty **Linda S. Harty, Director**	February 24, 2020
By	/s/ Brian P. Hehir **Brian P. Hehir, Director**	February 24, 2020
By	/s/ Michael W. D. Howell **Michael W. D. Howell, Director**	February 24, 2020
By	/s/ Ann R. Klee **Ann R. Klee, Director**	February 24, 2020

DESCRIPTION OF WABTEC COMMON STOCK REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The rights of holders of Common Stock are governed by, as applicable, Delaware law, the Restated Certificate of Incorporation of Wabtec, as amended (the "Wabtec Charter") and the Bylaws of Wabtec, as amended (the "Wabtec Bylaws"). The Wabtec Charter and the Wabtec Bylaws are each incorporated by reference into this Annual Report on Form 10-K.

The following description of the Common Stock does not purport to be complete and is subject to, and qualified in its entirety by reference to, as applicable, the complete text of the Wabtec Charter and the Wabtec Bylaws.

General

As of the date hereof, Wabtec's authorized capital stock consists of 501,000,000 shares of capital stock, consisting of up to 500,000,000 shares of Common Stock and up to 1,000,000 shares of preferred stock, par value $0.01 per share, in one or more series. As of February ___, 2020, there were [162,817,600] shares of Common Stock issued and outstanding and Wabtec had reserved [1,951,722] additional shares of Common Stock for issuance under its stock compensation plans. As of February ___, 2020, there were no shares of preferred stock issued and outstanding.

Common Stock

Dividends. The holders of Common Stock are entitled to receive dividends when, as and if declared by the Wabtec board of directors, out of funds legally available for their payment subject to the rights of holders of Wabtec preferred stock.

Voting Rights. The holders of Common Stock are entitled to one vote per share on all matters submitted to a vote of Wabtec stockholders. There are no cumulative voting rights associated with the Common Stock.

Rights Upon Liquidation. In the event of Wabtec's voluntary or involuntary liquidation, dissolution or winding up, the holders of Common Stock will be entitled to share equally in any of Wabtec's assets available for distribution after the payment in full of all debts and distributions and after the holders of all series of the outstanding shares of Wabtec preferred stock have received their liquidation preferences in full.

Miscellaneous. The outstanding shares of Common Stock are fully paid and nonassessable. The holders of Common Stock are not entitled to preemptive or redemption rights. There are no sinking fund provisions applicable to the Common Stock. Shares of Common Stock are not convertible into shares of any other class of capital stock. EQ Shareowner Services is the transfer agent and registrar for the Common Stock.

Stock Exchange Listing. The Common Stock is listed on the New York Stock Exchange and trades under the symbol "WAB."

SUBSIDIARIES AND AFFILIATES

Company		Ownership Interest
A and M Signalling Services Private Limited	India	100 %
Aero Transportation Products, Inc	Independence, Missouri	100 %
AM General Contractors SpA	Genova, Italy	100 %
A M Rail Group Limited	Burton-on-Trent, UK	100 %
A M Signalling Design Limited	Burton-on-Trent, UK	100 %
Annax GmbH	Brunnthal, Germany	100 %
Annax Scheiz AG	Bern, Switzerland	100 %
Annax (Suzhou) Rail Systems Co., Ltd	Suzhou, China	100 %
Ateliers Hubert Gerken S.A.	Belgium	100 %
Austbreck Pty, Ltd.	Hallam, Victoria, Australia	100 %
Barber Steel Foundry Corp.	Rothbury, Michigan	100 %
Barber Tian Rui Railway Supply LLC	Park Ridge, Illinois	50 %
Bearward Engineering Limited	Northampton, UK	100 %
Becorit GmbH	Recklinghausen,Germany	100 %
Beijing Wabtec Huaxia Technology Company Ltd.	Beijing, China	100 %
Brecknell Willis & Co., Ltd.	Char, Somerset, UK	100 %
Brecknell Willis (Tianjin) Electrification Systems, Co., Ltd.	TianJin, China	100 %
Cambridge Forming and Cutting Ltd.	Ontario, Canada	100 %
Changzhou CRRC GE Diesel Engine Company Limited.	Changzhou, China	50 %
CoFren S.A.S.	Vierzon, France	100 %
CoFren S.r.l.	Avellino, Italy	100 %
Coleman Hydraulics Limited	Burton-on-Trent, UK	100 %
CZ-Carbon Prodcuts s.r.o.	Czech Republic	100 %
Datong Faiveley Railway Vehicle Equipment Co. Ltd.	Datong City, China	50 %
Durox Company	Strongville, Ohio	100 %
East Erie Commercial Railroad	Erie, Pennsylvania	100 %
E-Carbon Asia Sdn. Bhd.	China	50 %
E-Carbon China Co., Ltd.	China	70 %
E-Carbon Far East Limited	Hong Kong	100 %
E-Carbon Far East Ltd. Shanghai	Shanghai, China	60 %
E-Carbon H.K. Limited	Hong Kong	70 %
E-Carbon S.A.	Belgium	100 %
Electrical Carbon UK Limited	United Kingdom	100 %
Evand Pty Ltd.	Wetherill Park, Australia	100 %
Faiveley Rail Engineering Singapore Pte Ltd	Singapore	50 %
Faiveley Transport Amiens	Amiens, France	100 %
Faiveley Transport Asia Pacific Ltd.	Hong Kong	100 %
Faiveley Transport Australia Ltd.	Rosehill, Australia	100 %
Faiveley Transport Birkenhead Ltd.	Birkenhead, UK	100 %
Faiveley Transport Canada Inc.	Montreal, Canada	100 %
Faiveley Transport Czech a.s.	Blovice, Czech Republic	100 %
Faiveley Transport Chile Ltda.	Santiago, Chile	100 %
Faiveley Transport DO Brasil Ltda.	Sao Paulo, Brazil	100 %
Faiveley Transport Far East Ltd	Hong Kong	100 %

Faiveley Transport Holding Gmbh & co KG	Whitten, Germany	100 %
Faiveley Transport Iberica SA	La Selva del Camp, Spain	100 %
Faiveley Transport Italia Spa	Turin, Italy	98.7 %
Faiveley Transport Korea Ltd	Seoul, Korea	100 %
Faiveley Transport Leipzig GmbH & Co-KG	Scheuditz, Germany	100 %
Faiveley Transport Malmo AB	Landskrona, Sweden	100 %
Faiveley Transport Metro Technology Shanghai Co Ltd.	Shanghai, China	100 %
Faiveley Transport Metro Technology Taiwan Ltd.	Taipei, Taiwan	100 %
Faiveley Transport Metro Technology Thailand Co Ltd.	Bangkok, Thailand	100 %
Faiveley Transport Nordic AB	Landskrona, Sweden	100 %
Faiveley Transport North America Inc	Greenville, South Carolina	100 %
Faiveley Transport Nowe GmbH	Elze, Germany	100 %
Faiveley Transport NSF	Neuville en Ferrain, France	100 %
Faiveley Transport Plezn s.r.o.	Nyrany, Chech Republic	100 %
Faiveley Transport Polska zoo	Poznan, Poland	100 %
Faiveley Transport Rail Technologies India Ltd.	Himachal Pradesh, India	100 %
Faiveley Transport Railway Trading Co. Ltd	Shanghai, China	100 %
Faiveley Transport S.A.	Gennevilliers, France	100 %
Faiveley Transport Schwab AG	Schaffhausen, Switzerland	100 %
Faiveley Transport Schweiz AG	Hagendorf, Switzerland	100 %
Faiveley Transport Service Maroc	Casablanca, Morocco	100 %
Faiveley Transport South Africa Pty (Ltd)	Monument Park, South Africa	100 %
Faiveley Transport Systems Technology (Beijing) Co. Ltd.	Beijing, China	100 %
Faiveley Transport Tamworth Ltd.	Tamworth, Staffordshire, UK	100 %
Faiveley Transport Tours	Saint Pierre des Corps, France	100 %
Faiveley Transport Tremosnice s.r.o.	Treomsnice, Czech Republic	100 %
Faiveley Transport USA Inc	Greenville, South Carolina	100 %
Faiveley Transport Verwaltungs GmbH	Scheuditz, Germany	100 %
Faiveley Transport Witten GmbH	Witten, Germany	100 %
F.I.P. Pty Ltd.	Sydney, Australia	100 %
FIP Brakes South Africa (Proprietary) Limited	Kempton Park, South Africa	70 %
Fandstan Electric Group, Ltd.	London, UK	100 %
Fandstan Electric Systems Pty, Ltd.	Gujarat, India	100 %
Fandstan Electric, Ltd.	London, UK	100 %
F.T.M.T. Singapore Pte Ltd	Singapore	100 %
FW Acquisition LLC	Wilmington, Delaware	100 %
G&B Specialties, Inc.	Berwick, Pennsylvania	100 %
Gerken Group S.A.	Belgium	100 %
Gerken Nordiska Karma Aktiebolag	Sweden	49 %
Gerken SAS	France	100 %
GE Diesel Locomotive Private Limited	New Delhi, India	75 %

GE Economic and Trading (Shanghai) Co., Ltd.	Shanghai, China	100 %
General Electric Transportation Egypt Services LLC.	Egypt	100 %
GE Global Sourcing India Pvt Ltd.	New Delhi, India	100 %
GE Mozambique Limitada	Nacala, Mozambique	100 %
GE (Shijiazhuang) Mining Equipment Co., Ltd.	Shijiazhuang, China	100 %
GE South Africa Technologies (Proprietary) Limited	Johannesburg, South Africa	100 %
GE Transportation, A Wabtec Company	Wilmington, Delaware	100 %
GE Transportation Engines Holding B.V.	Breda, Netherlands	100 %
GE Transportation Parts, LLC.	Wilmington, Delaware	100 %
GE Transportation System (Shenyang) Co. Ltd.	Shenyang, China	100 %
GE Transportation Systems (China) Co. Ltd.	Beijing, China	100 %
GE Transportation Systems Deutschland GmbH	Frankfurt am Main, Germany	100 %
GE Transportation Systems Ltd.	Altrincham, England	100 %
GE-UGM, LLC.	Wilmington, Delaware	100 %
GIMCO, SA de CV	Torreon, Mexico	100 %
Global Acquisition, S.a r.l.	Luxembourg	100 %
Graham White Manufacturing Company	Salem, Virginia	100 %
Huatie Wabtec Faiveley (Qingdao) Transport Equipment Co., Ltd.	Beijing, China	49 %
Hubei Dengfeng Unifin Electrical Equipment Cooling System Co., Ltd.	Daye City, Hubei, China	69 %
Hunan CSR Wabtec Railway Transportation Technology Co. Ltd.	Changsha, Hunan, China	50 %
Industrea Chile S.A.	Chile	100 %
Industrea Hong Kong YL Limited.	Hong Kong, China	100 %
Industrea Mining Equipment Pty Ltd.	Springfield Central, Australia	100 %
Industrea Mining Technology Pty Ltd.	Fountaindale, Australia	100 %
Industrea Pty Ltd	North Sydney, Australia	100 %
Industrea Wadam (Beijing) Mining Equipment Technical Services Co., Ltd	Beijing, China	100 %
Industrea Wadam Pty Ltd.	Burnley, Australia	100 %
InTrans Engineering Limited	Kolkata, West Bengal, India	100 %
Jiaxiang HK Smart Technology Co. Ltd.	Hong Kong, China	100 %
JSC Lokomotiv Kurastyru Zauyty	Kazakhstan	50 %
Keelex 351 Limited	Barton Under Needwood, England	100 %
Komatsu Wabtec Mining Systems, LLC.	Wilmington, Delaware	50 %
LH Access Technology Limited	Barton Under Needwood, England	100 %
LH Group Services Limited	Barton Under Needwood, England	100 %
LH Group Wheelsets Limited	Barton Under Needwood, England	100 %
Limited Liability Company Transportation Ukraine	Ukraine	100 %
Locomotive Manufacturing and Services, S.A. de C.V.	Mexico City, Mexico	100 %
Longwood Elastomers, Inc.	Wytheville, Virginia	100 %
Longwood Elastomers, S.A.	Soria, Spain	100 %

Longwood Engineered Products, Inc.	Greensboro, North Carolina	100 %
Longwood Industries, Inc.	Brenham, Texas	100 %
Longwood International, Inc.	Greensboro, North Carolina	100 %
LS&O Locomotoras MX, S. de R.L. de C.V.	Mexico	100 %
LWI Elastomers International, S.L.	Madrid, Spain	100 %
LWI International B.V.	Amsterdam, Netherlands	100 %
Manufacturas Del Noreste S.A. de C.V.	Portillo Saltillo, Mexico	100 %
Medagao (Suzhou) Rubber-Metal Components Co., Ltd.	Suzhou, Jiangsu, China	100 %
Melett (Changzhou) Precision Machinery Co. Limited	Jiangsu, China	100 %
Melett Limited	South Yorkshire, England	100 %
Melett North America, Inc.	Memphis, Tennessee	100 %
Melett Polska Spolka z Ograniczona odpowiedzialnoscia	Bydgos, Poland	100 %
Merz Industrietechnik GmbH	Österreich, Austria	100 %
Metalocaucho, S.L.	Urnieta, Gipuzkoa, Spain	100 %
Mors Smitt France S.A.S.	Sable sur Sarthe, France	100 %
Mors Smitt Holding S.A.S.	Utrecht, Netherlands	100 %
Mors Smitt Technologies, Inc.	Buffalo Grove, Illinois	100 %
Mors Smitt UK Ltd.	West Midlands UK	100 %
MorsSmitt Asia, Ltd.	Kwun Tong, Hong Kong	100 %
Motive Equipment Brasil Ltda	Belo Horizonte, Brazil	100 %
Motive Equipment, Inc.	Milwaukee, Wisconsin	100 %
MotivePower, Inc.	Boise, Idaho	100 %
MTC India Rubber Metal Components Private Limited	Bangalore, India	100 %
Napier Turbochargers Australia Pty Ltd.	Sydney, Australia	100 %
Napier Turbochargers Limited	Lincoln, Lincolnshire, UK	100 %
o.o.o. Faiveley Transport	Leningrad Region, Russia	100 %
Orion Engineering Ltd.	Hong Kong, China	100 %
Pantrac GmbH	Germany	100 %
Parts Supply Limited	Leicestershire, England	100 %
Poli S.r.l.	Camisano, Italy	100 %
Pride Bodies Ltd.	Ontario, Canada	100 %
PT Transportation Solutions Indonesia	Indonesia	100 %
Qingdao Faiveley Sri Rail Brake Co. Ltd.	Qingdao, Shadong, China	50 %
Railcar Management, LLC	Atlanta, Georgia	100 %
Railroad Controls Construction, Inc.	Benbrook, Texas	100 %
Railroad Controls, L.P.	Benbrook, Texas	100 %
Railroad Friction Products Corporation	Maxton, North Carolina	100 %
RCLP Acquisition LLC	Benbrook, Texas	100 %
Relay Monitoring Systems Pty Ltd.	Mulgrave, Australia	100 %

RFPC Holding Corp	Wilmington, Delaware	100 %
Ricon Corp	San Fernando, California	100 %
SAB Wabco (Investments) Ltd.	Birkenhead, UK	100 %
SAB Wabco UK Ltd.	Birkenhead, UK	100 %
Schaefer Equipment, Inc.	Warren, Ohio	100 %
SCT Europe Ltd.	Kirkcaldy, Fife, UK	100 %
SCT Technology LLC	Wilmington, Delaware	100 %
Semvac A/S	Odense, Denmark	100 %
Servicios de Administracion de Locomotoras, S. de R.L. de C.V.	Mexico	100 %
Shenyang CRRC Wabtec Railway Brake Technology Company, Ltd.	Shenyang, China	50 %
Shijiazhuang Jiaxiang Precision Machinery Co. Ltd.	Shijiazhuang, China	100 %
ShipXpress Technologies (Private) Limited	Nugegoda, Sri Lanka	100 %
Standard Car Truck Company	Park Ridge, Illinois	100 %
Standard Car Truck-Asia, Inc.	Chaoyang District, Beijing	100 %
Stemmann Technik France SAS	Buchelay, France	100 %
Stemmann-Technik GmbH	Schüttorf, Germany	100 %
Stemmann-Technik Hong Kong Company Limited	Hong Kong, China	100 %
Stemmann Polska SP Zoo	Katy Wroclawskie, Poland	100 %
Stemmann-Technik (Shanghai) Ltd.	Shanghai, China	100 %
Suecobras Consultoria Ferroviaria Ltda	Rio de Janeiro, Brazil	100 %
Thermal Transfer Acquisition Corporation	Duquesne, Pennsylvania	100 %
The Vista Corporation of Virginia	Salem, Virginia	100 %
TMT Holding AB	Stockholm, Sweden	51 %
Transportation Global Egypt L.L.C.	Egypt	100 %
Transportation Global LLC	Wilmington, Delaware	100 %
Transportation Holdings UK Limited	Altrincham, England	100 %
Transportation IP Holdings, LLC	Wilmington, Delaware	100 %
Transportation Kazakhstan Limited Liability Partnership	Kazakhstan	100 %
Transportation Poland sp. z o.o.	Poland	100 %
Transportation Rus Limited Liability Company	Moscow, Russia	100 %
Transportation Services and Technologies Nigeria Ltd.	Lagos, Nigeria	100 %
Transportation Systems and Services Cameroon Ltd.	Cameroon	100 %
Transportation Systems Pakistan (Private) Limited	Lahore, Pakistan	100 %
Transportation Systems Services Operations Inc.	Carson City, Nevada	100 %
Transportation Turkey Transportation Systems and Services Incorporated Company	Istanbul, Turkey	100 %
TransTech of South Carolina, Inc.	Piedmont, South Carolina	100 %
TRSP Systems and Services Kenya Ltd.	Kenya	100 %
TRSP Systems (Malaysia) SDN. BHD	Malaysia	100 %
Turbonetics Holdings, Inc.	Moorpark, California	100 %
Vapor Europe S.r.l.	Sassuolo, Modena, Italy	100 %
Vapor Ricon Europe Ltd.	Loughborough, Leicestershire, UK	100 %
Wabtec Assembly Services S. de R.L. de C.V.	San Luis Potosi, Mexico	100 %
Wabtec Australia Pty. Limited	Rydalmere, Australia	100 %

Wabtec (Beijing) Investment Co. Ltd.	Beijing, Fengtai District, China	100 %
Wabtec Brasil Fabricacao e Manutencao de Equipamentos Ltda	Belo Horizonte, Brazil	100 %
Wabtec Corporation	Wilmerding, Pennsylvania	100 %
Wabtec Canada, Inc.	Ontario, Canada	100 %
Wabtec China Friction Holding Limited	Hong Kong, China	100 %
Wabtec China Rail Products & Services Holding Limited	Hong Kong, China	100 %
Wabtec Control Systems Pty Ltd.	Osborne Park, Australia	100 %
Wabtec de Mexico, S. de R.L. de C.V.	San Luis Potosi, Mexico	100 %
Wabtec Equipamentos Ferroviarios Ltda.	Sao Paulo, Brazil	100 %
Wabtec Europe GmbH	Brunn am Gebirge, Austria	100 %
WABTEC Fabricación y Servicios, S. de R.L. de C.V.	Apodaca, Mexico	100 %
Wabtec Faiveley Rayli Sistemleri Ltd. Sti	Istanbul, Turkey	100 %
Wabtec Finance SRL	St. Michael, Barbados	100 %
Wabtec France S.A.S.	Paris, France	100 %
Wabtec FRG GmbH	Recklinghausen, Germany	100 %
Wabtec FRG Holdings GmbH & Co. KG	Recklinghausen, Germany	100 %
Wabtec Finance LLC	Wilmington, Delaware	100 %
Wabtec Golden Bridge Transportation Technology (Hangzhou) Company, Ltd.	Xinwan Town. China	100 %
Wabtec Greenville Real Estate LLC	Greenville, South Carolina	100 %
Wabtec Holding Corp	Wilmington, Delaware	100 %
Wabtec India Transportation Private Limited	Kolkata, India	100 %
Wabtec International, Inc.	Wilmington, Delaware	100 %
Wabtec Investments Limited LLC	Wilmington, Delaware	100 %
Wabtec Ireland Limited	Dublin, Ireland	100 %
WABTEC Locomotive Services Noreste, S.A. de C.V.	San Luis Potosi, Mexico	100 %
Wabtec Luxembourg, S.a r.l.	Luxembourg	100 %
Wabtec Manufacturing, LLC	Wilmington, Delaware	100 %
Wabtec Manufacturing Mexico S. de R.L. de C.V.	San Luis Potosí, Mexico	100 %
Wabtec Manufacturing Solutions, LLC	Wilmington, Delaware	100 %
Wabtec MZT AD Skopje	Skopje, Macedonia	87 %
Wabtec MZT Poland Sp. z.o.o.	Poznan, Poland	100 %
Wabtec Netherlands BV	Amsterdam, Netherlands	100 %
Wabtec Netherlands Holdings BV	Amsterdam, Netherlands	100 %
Wabtec Rail Limited	Doncaster, S.Yorkshire, UK	100 %
Wabtec Railway Electronics Corporation	Halifax, Nova Scotia, Canada	100 %

Wabtec Railway Electronics Holdings, LLC	Wilmington, Delaware	100 %
Wabtec Railway Electronics Manufacturing, Inc.	Wilmington, Delaware	100 %
Wabtec Railway Electronics, Inc.	Wilmington, Delaware	100 %
Wabtec Rus LLC	Moscow, Russia	100 %
Wabtec Servicios Administrativos, S.A. de C.V.	San Luis Potosi, Mexico	100 %
Wabtec South Africa Proprietary Limited	Kempton Park, South Africa	70 %
Wabtec Texmaco Rail Private Limited	Kolkata, India	60 %
Wabtec Transportation Canada Inc.	Ontario, Canada	100 %
Wabtec Transportation Global Holdings, LLC	Wilmington, Delaware	100 %
Wabtec Transportation Group Holdings Pty Ltd.	Richmond, Australia	100 %
Wabtec Transportation Ireland Limited	Dublin, Ireland	100 %
Wabtec Transportation Netherlands B.V.	Amsterdam, Netherlands	100 %
Wabtec Transportation Netherlands Holdings B.V.	Amsterdam, Netherlands	100 %
Wabtec UK Holdings Limited	Staffordshire, England	100 %
Wabtec UK Investments Limited	Manchester, England	100 %
Wabtec UK Manufacturing Limited	Burton-on-Trent, UK	100 %
Wabtec US Rail Holdings, Inc.	Wilmington, Delaware	100 %
Wabtec US Rail, Inc.	Wilmington, Delaware	100 %
Wabtec-UWC Ltd.	Limassol, Cyprus	51 %
Westinghouse Railway Holdings (Canada) Inc.	Toronto, Ontario, Canada	100 %
Wilmerding International Holdings C.V.	Amsterdam, Netherlands	100 %
Workhorse Holdings Corp	Indianapolis, Indiana	100 %
Workhorse Rail, LLC	Pittsburgh, Pennsylvania	100 %
Xorail, Inc.	Jacksonville, Florida	100 %
Young Touchstone Company	Oak Creek, Wisconsin	100 %
Zhongshan MorsSmitt Relay Ltd.	Zhongshan, China	100 %

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-8 No. 333-53753) pertaining to the 1998 Employee Stock Purchase Plan of Westinghouse Air Brake Technologies Corporation,

(2) Registration Statement (Form S-8 No. 333-39159) pertaining to the 1997 Executive Retirement Plan of Westinghouse Air Brake Technologies Corporation,

(3) Registration Statement (Form S-8 No. 333-02979) pertaining to the 1995 Non-Employee Directors’ Fee and Stock Option Plan of Westinghouse Air Brake Technologies Corporation,

(4) Registration Statement (Form S-8 No. 333-115014) pertaining to the 2004 Bonus Plan Agreements of Westinghouse Air Brake Technologies Corporation,

(5) Registration Statement (Form S-8 No. 333-137985) pertaining to the 2000 Stock Incentive Plan of Westinghouse Air Brake Technologies Corporation,

(6) Registration Statement (Form S-8 No. 333-41840) pertaining to the 2000 Stock Inventive Plan of Westinghouse Air Brake Technologies Corporation,

(7) Registration Statement (Form S-8 No. 333-40468) pertaining to the 1995 Non-Employee Directors’ Fee and Stock Option Plan of Westinghouse Air Brake Technologies Corporation,

(8) Registration Statement (Form S-8 No. 333-35744) pertaining to the 2000 Savings Plan of Westinghouse Air Brake Technologies Corporation,

(9) Registration Statement (Form S-8 No. 333-89086) pertaining to the 2002 Employee Stock Ownership Plan of Westinghouse Air Brake Technologies Corporation,

(10) Registration Statement (Form S-8 No. 333-179857) pertaining to the 2011 Stock Incentive Plan of Westinghouse Air Brake Technologies Corporation,

(11) Registration Statement (Form S-3 No. 333-219657) of Westinghouse Air Brake Technologies Corporation,

(12) Registration Statement (Form S-8 No. 219662) pertaining to the 1995 Non-Employee Directors' Fee and Stock Option Plan of Westinghouse Air Brake Technologies Corporation,

(13) Registration Statement (Form S-8 No. 219663) pertaining to the 2011 Stock Incentive Plan of Westinghouse Air Brake Technologies Corporation,

(14) Registration Statement (Form S-4 No. 533-227444) of Westinghouse Air Brake Technologies Corporation, and

(15) Registration Statement (Form S-3 No. 333-231125) of Westinghouse Air Brake Technologies Corporation;

of our reports dated February 24, 2020, with respect to the consolidated financial statements and schedule of Westinghouse Air Brake Technologies Corporation and the effectiveness of internal control over financial reporting of Westinghouse Air Brake Technologies Corporation included in this Annual Report (Form 10-K) of Westinghouse Air Brake Technologies Corporation for the year ended December 31, 2019.

/s/ ERNST & YOUNG LLP

Pittsburgh, Pennsylvania
February 24, 2020

Exhibit 31.1

CERTIFICATION

I, Rafael Santana, certify that:

1. I have reviewed this annual report on Form 10-K of Westinghouse Air Brake Technologies Corporation.

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual report based on such evaluation; and

(d) Disclosed in this annual report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2020

By:	/s/ RAFAEL SANTANA
Name:	**Rafael Santana**
Title:	**President and Chief Executive Officer**

Exhibit 31.2

CERTIFICATION

I, Patrick D. Dugan, certify that:

1. I have reviewed this annual report on Form 10-K of Westinghouse Air Brake Technologies Corporation.

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual report based on such evaluation; and

(d) Disclosed in this annual report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2020

By:	/s/ PATRICK D. DUGAN
Name:	**Patrick D. Dugan**
Title:	**Executive Vice President Finance and Chief Financial Officer**

Exhibit 32.1

CERTIFICATION

Pursuant to 18 U.S.C. § 1350, the undersigned officers of Westinghouse Air Brake Technologies Corporation (the "*Company*"), hereby certify, to the best of their knowledge, that the Company's Annual Report on Form 10-K for the year ended December 31, 2016 (the "*Report*") fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By: /s/ RAFAEL SANTANA

Rafael Santana
President and Chief Executive Officer

Date: February 24, 2020

By: /s/ PATRICK D. DUGAN

Patrick D. Dugan
Executive Vice President Finance and Chief Financial Officer

Date: February 24, 2020