

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 1-134
CURTISS-WRIGHT CORPORATION
(Exact name of Registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

13-0612970

(I.R.S. Employer Identification No.)

130 Harbour Place Drive, Suite 300

Davidson, North Carolina

(Address of principal executive offices)

28036

(Zip Code)

Registrant's telephone number, including area code: (704) 869-4600

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

Title of each class
Common Stock

Trading Symbol(s)
CW

Name of each exchange on which registered
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 Section 15(d) of the Act.

Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

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

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

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

The aggregate market value of the voting and non-voting Common stock held by non-affiliates of the Registrant as of June 30, 2019 was approximately \$4.7 billion.

The number of shares outstanding of the Registrant's Common stock as of January 31, 2020:

Class	Number of shares
Common stock, par value \$1 per share	42,708,603

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement of the Registrant with respect to the 2020 Annual Meeting of Stockholders to be held on May 7, 2020 are incorporated by reference into Part III of this Form 10-K.

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PART I

FORWARD-LOOKING STATEMENTS

Except for historical information, this Annual Report on Form 10-K may be deemed to contain “forward-looking statements” within the meaning of the Private Litigation Reform Act of 1995. Examples of forward-looking statements include, but are not limited to: (a) projections of or statements regarding return on investment, future earnings, interest income, sales, volume, other income, earnings or loss per share, growth prospects, capital structure, liquidity requirements, and other financial terms, (b) statements of plans and objectives of management, (c) statements of future economic performance, (d) the effect of laws, rules, regulations, new accounting pronouncements, and outstanding litigation on our business and future performance, and (e) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking statements can be identified by the use of forward-looking terminology such as “anticipates,” “believes,” “continue,” “could,” “estimate,” “expects,” “intend,” “may,” “might,” “outlook,” “potential,” “predict,” “should,” “will,” as well as the negative of any of the foregoing or variations of such terms or comparable terminology, or by discussion of strategy. No assurance may be given that the future results described by the forward-looking statements will be achieved. While we believe these forward-looking statements are reasonable, they are only predictions and are subject to known and unknown risks, uncertainties, and other factors, many of which are beyond our control, which could cause actual results, performance or achievement to differ materially from anticipated future results, performance or achievement expressed or implied by such forward-looking statements. In addition, other risks, uncertainties, assumptions, and factors that could affect our results and prospects are described in this report, including under the heading “Item 1A. Risk Factors” and elsewhere, and may further be described in our prior and future filings with the Securities and Exchange Commission and other written and oral statements made or released by us. Such forward-looking statements in this Annual Report on Form 10-K include, without limitation, those contained in Item 1. Business, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations, and Item 8. Financial Statements and Supplementary Data, including, without limitation, the Notes to Consolidated Financial Statements.

Given these risks and uncertainties, you are cautioned not to place undue reliance on such forward-looking statements. These forward-looking statements speak only as of the date they were made, and we assume no obligation to update forward-looking statements to reflect actual results or changes in or additions to the factors affecting such forward-looking statements.

Item 1. Business.

BUSINESS DESCRIPTION

Curtiss-Wright Corporation and its subsidiaries (we, the Corporation, or the Company) is a global, diversified manufacturing and service company that designs, manufactures, and overhauls precision components and provides highly engineered products and services to the defense, general industrial, commercial aerospace, and power generation markets. We were formed in 1929 by the merger of companies founded by the Wright brothers and Glenn Curtiss, who were aviation pioneers. We are incorporated under the laws of the State of Delaware and headquartered in Davidson, North Carolina. Our common stock is listed on the New York Stock Exchange (NYSE) and trades under the symbol CW.

We expect that the diversification and breadth of our portfolio should improve our competitive positions in our core markets, mitigate the impact of business cycle volatility, and allow us to drive growth in new products and markets. We seek to leverage and build upon our critical mass to expand our global manufacturing capabilities, sales channels, and customer relationships. We strive for consistent organic sales growth, operating margin expansion, and free cash flow generation, while maintaining a disciplined capital deployment strategy in order to drive long-term shareholder value.

We are well positioned on high-performance platforms and critical applications that require our technical sophistication and benefit from decades of engineering expertise. Our technologies are relied upon to improve safety, operating efficiency, and reliability, while meeting demanding performance requirements. Our ability to provide these advanced technologies on a cost-effective basis is fundamental to our strategy to drive increased value to our customers. We compete globally, primarily based on technology and pricing.

Business Segments

We manage and evaluate our operations based on the products and services we offer and the different markets we serve. Based on this approach, we operate through three segments: Commercial/Industrial, Defense, and Power.

Our principal domestic manufacturing facilities are located in Arizona, New York, North Carolina, Ohio, Pennsylvania, and South Carolina, and internationally in Canada, Mexico, and the United Kingdom.

Commercial / Industrial

Sales in the Commercial/Industrial segment are primarily to the general industrial and commercial aerospace markets and, to a lesser extent, the defense and power generation markets. The businesses in this segment provide a diversified offering of highly engineered products and services including: industrial vehicle products, such as electronic throttle control devices, joysticks, and transmission shifters, sensors, controls, and electro-mechanical actuation components and utility systems used on commercial aircraft, severe-service valves to the industrial market, and surface technology services, such as shot peening, laser peening, coatings, and advanced analytical testing. The industrial businesses within our Commercial/Industrial segment are impacted primarily by general economic conditions, which may include consumer consumption or commercial construction rates, as the nature of their products and services primarily support global industrial, oil and gas, commercial vehicles, medical, and transportation industries. The commercial aerospace business, in particular, is impacted by OEM production rates of new aircraft, while the defense business is impacted by government funding and spending on new programs, primarily driven by the U.S. Government. As commercial industrial businesses, production and service processes rest primarily within material modification, machining, assembly, and testing and inspection at commercial grade specifications. The businesses distribute products through commercial sales and marketing channels.

Defense

Sales in the Defense segment are primarily to the defense markets and, to a lesser extent, the commercial aerospace market. The businesses in this segment provide a diversified offering of products including: Commercial Off-the-Shelf (COTS) embedded computing board-level modules, data acquisition and flight test instrumentation equipment, integrated subsystems, instrumentation and control systems, turret aiming and stabilization products, and weapons handling systems. The businesses within our Defense segment are impacted primarily by government funding and spending, driven primarily by the U.S. Government. Our products typically support government entities in the aerospace defense, ground defense, and naval defense industries. As a result, we have varying degrees of content on most fighter jets, helicopters, unmanned aerial vehicles (UAVs), ground vehicle platforms, and nuclear and non-nuclear surface ships and submarines. Additionally, we provide avionics and electronics, flight test equipment, and aircraft data management solutions to the commercial aerospace market. Our defense businesses supporting government contractors typically utilize more advanced and ruggedized production and service processes

compared to our commercial businesses and have more stringent specifications and performance requirements. The businesses in this segment typically market and distribute products through regulated government contracting channels.

Power

Sales in the Power segment are primarily to the commercial nuclear power generation and naval defense markets. For the commercial markets, we provide a diversified offering of products for commercial nuclear power plants and nuclear equipment manufacturers, including hardware, pumps, valves, fastening systems, specialized containment doors, airlock hatches, and spent fuel management products. We also provide Reactor Coolant Pumps (RCPs) and control rod drive mechanisms for commercial nuclear power plants, most notably to support the Westinghouse AP1000 reactor design. The businesses are dependent upon the need for ongoing maintenance, repair and overhaul of existing operating power plants, typically to U.S. customers, as well as the construction of new power plants globally. The businesses distribute products through commercial sales and marketing channels and are impacted by pricing and demand for various forms of energy (e.g. coal, natural gas, oil, and nuclear) and also subject to changes in regulation which may impact demand, consumption, and underlying supply. For the defense markets, our products support the naval defense market, in which we specifically provide naval propulsion and auxiliary equipment, including main coolant pumps, power-dense compact motors, generators, steam turbines, valves, and secondary propulsion systems, primarily to the U.S. Navy. We also provide ship repair and maintenance for the U.S. Navy's Atlantic and Pacific fleets through three service centers. The defense businesses in this segment are impacted by government funding and spending on shipbuilding programs, primarily driven by the U.S. Government.

OTHER INFORMATION

Certain Financial Information

For information regarding sales by geographic region, see Note 17 to the Consolidated Financial Statements contained in Part II, Item 8, of this Annual Report on Form 10-K.

In 2019, 2018, and 2017, our foreign operations as a percentage of pre-tax earnings were 31%, 39%, and 40%, respectively.

Government Sales

Our sales to the U.S. Government and foreign government end use represented 43%, 40%, and 39% of total net sales during 2019, 2018, and 2017, respectively.

In accordance with normal U.S. Government business practices, contracts and orders are subject to partial or complete termination at any time at the option of the customer. In the event of a termination for convenience by the government, there generally are provisions for recovery of our allowable incurred costs and a proportionate share of the profit or fee on the work completed, consistent with regulations of the U.S. Government. Fixed-price redeterminable contracts usually provide that we absorb the majority of any cost overrun. In the event that there is a cost underrun, the customer recoups a portion of the underrun based upon a formula in which the customer's portion increases as the underrun exceeds certain established levels.

Generally, long-term contracts with the U.S. Government require us to invest in and carry significant levels of inventory. However, where allowable, we utilize progress payments and other interim billing practices on nearly all of these contracts, thus reducing working capital requirements. It is our policy to seek customary progress payments on certain contracts. Where we obtain such payments under U.S. Government prime contracts or subcontracts, the U.S. Government generally has control of the materials and work in process allocable or chargeable to the respective contracts. (See Notes 1, 4, and 5 to the Consolidated Financial Statements, contained in Part II, Item 8, of this Annual Report on Form 10-K).

Customers

We have hundreds of customers in the various industries we serve. No commercial customer accounted for more than 10% of our total net sales during 2019, 2018, or 2017.

Approximately 38% of our total net sales for 2019, 34% for 2018, and 33% for 2017 were derived from contracts with agencies of, and prime contractors to, the U.S. Government. Information on our sales to the U.S. Government, including both direct sales as a prime contractor and indirect sales as a subcontractor, is as follows:

Year Ended December 31,

<i>(In thousands)</i>	2019	2018	2017
Commercial/Industrial	\$ 218,094	\$ 191,036	\$ 178,202
Defense	397,055	362,776	369,977
Power	321,556	261,188	191,733
Total U.S. Government sales	\$ 936,705	\$ 815,000	\$ 739,912

Patents

We own and license a number of United States and foreign patents and patent applications, which have been obtained or filed over a period of years. We also license intellectual property to and from third parties. Specifically, the U.S. Government receives licenses to our patents that are developed in performance of government contracts, and it may use or authorize others to use the technology covered by such patents for government purposes. Additionally, trade secrets, unpatented research and development, and engineering, some of which have been acquired by the company through business acquisitions, make an important contribution to our business. While our intellectual property rights in the aggregate are important to the operation of our business, we do not consider the success of our business or business segments to be materially dependent upon the timing of expiration or protection of any one or group of patents, patent applications, or patent license agreements under which we now operate.

Executive Officers

Name	Current Position	Business Experience	Age	Executive Officer Since
David C. Adams	Chairman and Chief Executive Officer	Chairman and Chief Executive Officer of the Corporation since January 2015. Prior to this, he served as President and Chief Executive Officer of the Corporation from August 2013. He also served as President and Chief Operating Officer of the Corporation from October 2012 and as Co-Chief Operating Officer of the Corporation from November 2008. He has been a Director of the Corporation since August 2013.	65	2005
Thomas P. Quinly	Vice President and Chief Operating Officer	Vice President of the Corporation since November 2010 and Chief Operating Officer of the Corporation since October 2013. He also served as President of Curtiss-Wright Controls, Inc. from November 2008.	61	2010
Glenn E. Tynan	Vice President and Chief Financial Officer	Vice President and Chief Financial Officer of the Corporation since June 2002.	61	2000
Paul J. Ferdenzi	Vice President, General Counsel, and Corporate Secretary	Vice President, General Counsel, and Corporate Secretary of the Corporation since March 2014. Prior to this, he served as Vice President-Human Resources of the Corporation from November 2011 and also served as Associate General Counsel and Assistant Secretary of the Corporation from June 1999 and May 2001, respectively.	52	2011
K. Christopher Farkas	Vice President of Finance and Corporate Controller	Vice President of Finance since December 2017. Prior to this, he served as Vice President and Corporate Controller of the Corporation from September 2014 and also served as Assistant Corporate Controller from May 2009.	51	2014
Harry S. Jakubowitz	Vice President and Treasurer	Vice President of the Corporation since May 2007 and Treasurer of the Corporation since September 2005.	67	2007

Employees

At the end of 2019, we had approximately 9,100 employees, 7% of which are represented by labor unions and covered by collective bargaining agreements.

Available information

We file annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and proxy statements for our annual stockholders' meetings, as well as any amendments to those reports, with the Securities and Exchange Commission (SEC). The SEC maintains an Internet site at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including our filings. These reports are also available free of charge through the Investor Relations section of our web site at www.curtisswright.com as soon as reasonably practicable after we electronically file.

Item 1A. Risk Factors.

We have summarized the known, material risks to our business below. Our business, financial condition, and results of operations and cash flows could be materially and adversely impacted if any of these risks materialize. Additional risk factors not currently known to us or that we believe are immaterial may also impair our business, financial condition, and results of operations and cash flows. The risk factors below should be considered together with information included elsewhere in this Annual Report on Form 10-K as well as other required filings by us to the Securities Exchange Commission, such as our Form 10-Q's, Form 8-K's, proxy statements for our annual shareholder meetings, and subsequent amendments, if any.

Intrusion on our systems could damage our business.

We store sensitive data, including intellectual property, proprietary business information, and confidential employee information on our servers and databases. Various privacy and securities laws require us to manage and protect sensitive and confidential information, including personal data of our employees, from disclosure. For example, the European Union's General Data Protection Regulation, which became effective in May 2018, extends the scope of the European Union data protection laws to all companies processing data of European Union residents, regardless of the company's location. Despite our implementation of firewalls, switchgear, and other network security measures, our servers, databases, and other systems may be vulnerable to computer hackers, physical or electronic break-ins, sabotage, computer viruses, worms, and similar disruptions from unauthorized tampering with our computer systems. We continue to review and enhance our computer systems as well as provide training to our employees in an attempt to prevent unauthorized and unlawful intrusions, but in the future it is possible that we may not be able to prevent all intrusions. Such intrusions could result in our network security or computer systems being compromised and possibly result in the misappropriation or corruption of sensitive information or cause disruptions in our services. While we carry cyber insurance, we still may be required to expend significant capital and resources to protect against, remediate, or alleviate problems caused by such intrusions. Any such intrusion could cause us to be non-compliant with applicable laws or regulations, subject us to legal claims or proceedings, disrupt our operations, damage our reputation, and cause a loss of confidence in our products and services, any of which could have a material adverse effect on our business, financial condition, and results of operations.

Our future growth and continued success is dependent upon our key personnel.

Our success is dependent upon the efforts of our senior management personnel and our ability to attract and retain other highly qualified management and technical personnel. We face competition for management and qualified technical personnel from other companies and organizations. Therefore, we may not be able to retain our existing management and technical personnel or fill new management or technical positions or vacancies created by expansion or turnover at our existing compensation levels. Although we have entered into change of control agreements with some members of senior management, we do not have employment contracts with our key executives. As some of our key executives approach retirement age, we have made a concerted effort to reduce the effect of the loss of our senior management personnel through management succession planning. However, we may be required to devote significant time and resources to identify and integrate key new personnel should key management losses occur earlier than anticipated. The loss of members of our senior management and qualified technical personnel could have a material adverse effect on our business.

Implementing our acquisition strategy involves risks, and our failure to successfully implement this strategy could have a material adverse effect on our business.

As part of our capital allocation strategy, we aim to grow our business by selectively pursuing acquisitions to supplement our organic growth. We are continuing to actively pursue additional acquisition opportunities, some of which may be material to our business and financial performance. Although we have been successful with this strategy in the past, we may not be able to grow our business in the future through acquisitions for a number of reasons, including:

- Encountering difficulties identifying and executing acquisitions;
- Increased competition for targets, which may increase acquisition costs;
- Consolidation in our industry, reducing the number of acquisition targets;
- Competition laws and regulations preventing us from making certain acquisitions; and
- Acquisition financing not being available on acceptable terms or at all.

In addition, there are potential risks associated with growing our business through acquisitions, including the failure to successfully integrate and realize the expected benefits of an acquisition. For example, with any past or future acquisition, there is the possibility that:

- The business culture of the acquired business may not match well with our culture;
- Technological and product synergies, economies of scale, or cost reductions may not occur as expected;
- Management may be distracted from overseeing existing operations by the need to integrate acquired businesses;

- We may acquire or assume unexpected liabilities;
- We may experience unforeseen difficulties in integrating operations and systems;
- We may fail to retain or assimilate employees of the acquired business;
- We may experience problems in retaining customers or integrating customer bases; and
- We may encounter difficulties in entering new markets in which we may have little or no experience.

Failure to successfully implement our acquisition strategy, including successfully integrating acquired businesses, could have a material adverse effect on our business, financial condition, and results of operations.

Our business, financial condition, and results of operations could be materially adversely affected if the United States were to withdraw from or materially modify certain international trade agreements, or if tariffs or other restrictions on the foreign-sourced goods that we sell were to increase.

A significant portion of our business activities are conducted in foreign countries, including Mexico and Canada. Our business benefits from free trade agreements such as the North American Free Trade Agreement (NAFTA) and also relies on various U.S. corporate tax provisions related to international commerce as we build, market, and sell our products globally. On November 30, 2018, President Trump signed the United States-Mexico-Canada Agreement (USMCA) to replace NAFTA. The USMCA maintains duty-free access for most products and leaves most key provisions of the NAFTA agreement largely intact. The USMCA has been approved by the U.S. and Mexico, but still requires approval by Canada's Parliament before becoming effective. Additionally, in December 2018, President Trump announced his intention for the United States to withdraw from NAFTA. The outcome of the approval process is uncertain, but it is possible that withdrawal from NAFTA or failure of Canada's Parliament to approve the USMCA could cause an increase in customs duties. This in turn could adversely affect intercompany transactions among our operating subsidiaries in Canada, Mexico, and the U.S., as well as increase transaction costs with third-party suppliers and customers.

Furthermore, the current administration has threatened to impose more stringent trade terms with China and other countries. Despite the execution of the trade deal between the U.S. and China in January 2020, tariffs in some cases will remain in place, albeit at a lower rate. All of this could lead to increased costs and diminished sales opportunities in the U.S. and China markets. Media and political reactions in the affected countries could potentially exacerbate the impact on our operations in those countries. The U.S. Administration's assertive trade policies could result in further conflicts with U.S. trading partners, which could affect our supply chains, sourcing, and markets. Foreign countries may impose additional burdens on us through the use of local regulations, tariffs, or other requirements, which could increase our operating costs in those foreign jurisdictions. At this time, it remains unclear what actions, if any, President Trump will take with respect to other international trade agreements as well as U.S. tax provisions related to international commerce.

A substantial portion of our revenues and earnings depends upon the continued willingness of the U.S. Government and other customers in the defense industry to buy our products and services.

In 2019, approximately 38% of our total net sales were derived from or related to U.S. defense programs. U.S. defense spending has historically been cyclical, and defense budgets tend to rise when perceived threats to national security increase the level of concern over the country's safety. At other times, spending by the military can decrease. In August 2011, Congress enacted the Budget Control Act of 2011 (BCA), which imposed spending caps and certain reductions in defense spending over a ten-year period through 2021. These spending caps and reductions, referred to as sequestration, went into effect in March 2013. Through a series of bipartisan agreements, Congress has been able to temporarily lift discretionary spending limits every year through 2019. On August 2, 2019, President Trump signed the Bipartisan Budget Act of 2019 (BBA) into law, which raised the BCA budget caps for both defense and non-defense spending in 2020 and 2021. The BBA also temporarily suspends the public debt limit through July 31, 2021. However, the BCA remains in place, extended through 2029. Absent additional legislative or other remedial action, the sequestration could require reduced U.S. federal government spending from fiscal 2022 through fiscal 2029. As a result of this uncertainty, a decrease in U.S. Government defense spending or changes in spending allocation could result in one or more of our programs being reduced, delayed, or terminated. In the event that one or more of our programs are reduced, delayed, or terminated for which we provide products and services and are not offset by revenues from foreign sales, new programs, or products or services that we currently manufacture or provide, we may experience a reduction in our revenues and earnings and a material adverse effect on our business, financial condition, and results of operations.

As a U.S. Government contractor, we are subject to a number of procurement rules and regulations.

We must comply with and are affected by laws and regulations relating to the award, administration, and performance of U.S. Government contracts. Government contract laws and regulations affect how we do business with our customers and, in some instances, impose added costs on our business. A violation of specific laws and regulations could result in the imposition of fines and penalties, the termination of our contracts, or debarment from bidding on contracts. These fines and penalties could be imposed for failing to follow procurement integrity and bidding rules, employing improper billing practices or otherwise failing to follow cost accounting standards, receiving or paying kickbacks, or filing false claims. We have been, and expect to continue to be, subjected to audits and investigations by government agencies. The failure to comply with the terms of our government contracts could harm our business reputation. It could also result in our progress payments being withheld. In some instances, these laws and regulations impose terms or rights that are more favorable to the government than those typically available to commercial parties in negotiated transactions. For example, the U.S. Government may terminate any of our government contracts and, in general, subcontracts, at its convenience as well as for default based on performance. Upon termination for convenience of a fixed-price type contract, we normally are entitled to receive the purchase price for delivered items, reimbursement for allowable costs for work-in-process, and an allowance for profit on work actually completed on the contract or adjustment for loss if completion of performance would have resulted in a loss. Upon termination for convenience of a cost reimbursement contract, we normally are entitled to reimbursement of allowable costs plus a portion of the fee. Such allowable costs would normally include our cost to terminate agreements with our suppliers and subcontractors. The amount of the fee recovered, if any, is related to the portion of the work accomplished prior to termination and is determined by negotiation.

A termination arising out of our default could have a material adverse effect on our ability to compete for future contracts and orders. In addition, on those contracts for which we are teamed with others and are not the prime contractor, the U.S. Government could terminate a prime contract under which we are a subcontractor, irrespective of the quality of our services as a subcontractor.

Our U.S. Government contracts typically span one or more base years and multiple option years. The U.S. Government generally has the right to not exercise option periods and may not exercise an option period if the agency is not satisfied with our performance on the contract or does not receive funding to continue the program. U.S. Government procurement may adversely affect our cash flow or program profitability.

Furthermore, we are subject to other risks in connection with government contracts, including without limitation:

- the frequent need to bid on programs prior to completing the necessary design, which may result in unforeseen technological difficulties and/or cost overruns;
- the difficulty in forecasting long-term costs and schedules and the potential obsolescence of products related to long-term, fixed price contracts;
- contracts with varying fixed terms that may not be renewed or followed by follow-on contracts upon expiration;
- cancellation of the follow-on production phase of contracts if program requirements are not met in the development phase; and
- the fact that government contract wins can be contested by other contractors.

Our operations are subject to numerous domestic and international laws, regulations, and restrictions. Noncompliance with these laws, regulations, and restrictions could expose us to fines, penalties, suspension, or debarment, which could have a material adverse effect on our profitability and overall financial condition.

We have contracts and operations in many parts of the world subject to United States and foreign laws and regulations, including the False Claims Act, regulations relating to import-export control (including the International Traffic in Arms Regulation promulgated under the Arms Export Control Act), technology transfer restrictions, repatriation of earnings, exchange controls, the Foreign Corrupt Practices Act, the U.K. Anti-Bribery Act, and the anti-boycott provisions of the U.S. Export Administration Act. Although we have implemented policies and procedures and provided training that we believe are sufficient to address these risks, we cannot guarantee that our operations will always comply with these laws and regulations. From time to time, we may file voluntary disclosure reports with the U.S. Department of State, the Department of Energy, and the Department of Commerce regarding certain violations of U.S. export control laws and regulations discovered by us in the course of our business activities, employee training, or internal reviews and audits. To date, our voluntary disclosures have not resulted in a fine, penalty, or export privilege denial or restriction that has had a material adverse impact on

our financial condition or ability to export. Our failure, or failure by our sales representatives or consultants to comply with these laws and regulations could result in administrative, civil, or criminal liabilities and could, in the extreme case, result in suspension or debarment from government contracts or suspension of our export privileges, which could have a material adverse effect on our business.

The airline industry is heavily regulated, and if we fail to comply with applicable requirements, our results of operations could suffer.

Governmental agencies throughout the world, including the U.S. Federal Aviation Administration (FAA) and the European Aviation Safety Agency, prescribe standards and qualification requirements for aircraft components, including virtually all commercial airline and general aviation products. Specific regulations vary from country to country, although compliance with FAA requirements generally satisfies regulatory requirements in other countries. We include documentation with our products sold to aircraft manufacturing customers certifying that each part complies with applicable regulatory requirements and meets applicable standards of airworthiness established by the FAA or the equivalent regulatory agencies in other countries. In order to sell our products, the Corporation as well as the products we manufacture must also be certified by our individual original equipment manufacturers (OEM) customers. If any of the material authorizations or approvals qualifying us to supply our products is revoked or suspended, then the sale of such product would be prohibited by law, which would have an adverse effect on our business, financial condition, and results of operations.

From time to time, the FAA or equivalent regulatory agencies in other countries propose new regulations or changes to existing regulations, which are usually more stringent than existing regulations. If these proposed regulations are adopted and enacted, we may incur significant additional costs to achieve compliance, which could have a material adverse effect on our business, financial condition, and results of operations.

Our future success will depend, in part, on our ability to develop new technologies.

Virtually all of the products produced and sold by us are highly engineered and require sophisticated manufacturing and system-integration techniques and capabilities. The commercial and government markets in which we operate are characterized by rapidly changing technologies. The product and program needs of our government and commercial customers change and evolve regularly. Accordingly, our future performance depends in part on our ability to: identify emerging technological trends in our current and target markets, develop and manufacture competitive products, systems, and services, enhance our offerings by adding technological innovations that differentiate our products, systems, and services from those of our competitors, and develop, manufacture, and bring those products, systems, and service to market quickly at cost-effective prices.

We operate in highly competitive markets.

Many of our products and services are sold in highly competitive markets and are affected by varying degrees of competition. We compete against companies that often have higher sales volumes and greater financial, technological, research and development, human, and marketing resources than we have. As a result, they may be better able to withstand the effects of periodic economic downturns. In addition, some of our largest customers could develop the capability to manufacture products or provide services similar to products that we manufacture or services that we provide. This would result in these customers supplying their own products or services and competing directly with us for sales of these products or services, all of which could significantly reduce our revenues. Furthermore, we are facing increased international competition and cross-border consolidation of competition. Our management believes that the principal points of competition in our markets are technology, product quality, product performance, price, technical expertise, timeliness of delivery, superior customer service and support, and continued certification under customer quality requirements and assurance programs. If we are unable to compete successfully with existing or new competitors in these areas, we may experience a material adverse effect on our business, financial condition, and results of operations.

A downturn in the aircraft market could adversely affect our business.

Our sales to large commercial aircraft manufacturers are cyclical in nature and can be adversely affected by a number of factors, including current and future passenger traffic levels, increasing fuel and labor costs, intense price competition, the retirement of older aircraft, regulatory changes, outbreak of infectious disease, terrorist attacks, general economic conditions, worldwide airline profits, and backlog levels, all of which can be unpredictable and are outside our control. Any decrease in demand resulting from a downturn in the aerospace market could adversely affect our business, financial condition, and results of operations.

Global economic conditions may adversely affect our business, operating results and financial condition.

Although we currently generate significant operating cash flows, which combined with access to the credit markets provides us with significant discretionary funding capacity, global macroeconomic uncertainty, including escalating trade disputes between the United States and China, the United Kingdom's withdrawal from the European Union, and uncertainty regarding the stability of global credit and financial markets could affect our ability to fund our operations. In addition, certain of our customers and suppliers could be affected directly by an economic downturn and could face credit issues or cash flow problems that could give rise to payment delays, increased credit risk, bankruptcies, and other financial hardships, which could impact customer demand for our products as well as our ability to manage normal commercial relationships with our customers and suppliers. Depending on their severity and duration, the effects and consequences of a global economic downturn could have an adverse impact on our results of operations and financial condition.

Political and economic changes in foreign countries and markets, including foreign currency fluctuations, may have a material effect on our operating results.

During 2019, approximately 31% of our total net sales were to customers outside of the United States. Additionally, we also have operating facilities located in foreign countries. Doing business in foreign countries is subject to numerous risks, including without limitation: political and economic instability, the uncertainty of the ability of non-U.S. customers to finance purchases, restrictive trade policies, changes in the local labor-relations climate, economic conditions in local markets, health concerns, and complying with foreign regulatory and tax requirements that are subject to change. While these factors or the impact of these factors are difficult to predict, any one or more of these factors could adversely affect our operations. To the extent that foreign sales are transacted in foreign currencies and we do not enter into currency hedge transactions, we are exposed to risk of losses due to fluctuations in foreign currency exchange rates, particularly for the British Pound, Euro, and Canadian dollar. Significant fluctuations in the value of the currencies of the countries in which we do business could have an adverse effect on our results of operations.

Potential product liability risks exist from the products that we sell.

We may be exposed to liabilities for personal injury, death, or property damage due to the failure of a product that we have sold. We typically agree to indemnify our customers against certain liabilities resulting from the products we sell, and any third-party indemnification we seek from our suppliers and our liability insurance may not fully cover our indemnification obligations to customers. We may also not be able to maintain insurance coverage in the future at an acceptable cost. Any liability for which third-party indemnification is not available that is not covered by insurance could have a material adverse effect on our business, financial condition, and results of operations.

In addition, an accident caused by one of our products could damage our reputation for selling quality products. We believe that our customers consider safety and reliability as key criteria in selecting our products and believe that our reputation for quality assurance is a significant competitive strength. If an accident were to be caused by one of our products, or if we were to otherwise fail to maintain a satisfactory record of safety and reliability, our ability to retain and attract customers may be materially adversely affected.

We are subject to liability under warranty obligations.

The majority of our contracts contain provisions which expose us to potential liability for warranty claims made by customers or third parties with respect to products that have been designed, manufactured, or serviced by us or our suppliers. Material product warranty obligations could have a material adverse effect on our business, financial condition, and results of operations. Further, our reputation may be adversely affected by such defective product claims, whether or not successful, including potential negative publicity about our products.

Unanticipated changes in our tax provisions or exposure to additional income tax liabilities could affect our cash flows and financial condition.

Our business operates in many locations under government jurisdictions that impose income taxes. Changes in domestic or foreign income tax laws and regulations, or their interpretation, could result in higher or lower income tax rates assessed or changes in the taxability of certain revenues or the deductibility of certain expenses, thereby affecting our income tax expense and profitability. In addition, the amount of income taxes paid by us is subject to examination by U.S. federal, state, and local tax authorities and by non-U.S. tax authorities. We regularly assess the likelihood of an adverse outcome resulting from such examinations to determine the adequacy of our provision for taxes. There can be no assurance as to the outcome of any such examinations. If the ultimate determination of our taxes owed were for an amount in excess of amounts reserved, our operating results, cash flows, and financial condition could be materially and adversely affected.

If we fail to satisfy our contractual obligations, our contracts may be terminated and we may incur significant costs or liabilities, including liquidated damages and penalties.

In general, our contracts may be terminated for our failure to satisfy our contractual obligations. In addition, some of our contracts contain substantial liquidated damages provisions and financial penalties related to our failure to satisfy our contractual obligations. For example, the terms of the Electro-Mechanical Division's AP1000 China and AP1000 U.S. contracts with Westinghouse Electric Company (WEC) include liquidated damage penalty provisions for failure to meet contractual delivery dates if we caused the delay and the delay was not excusable. On October 10, 2013, we received a letter from WEC stating entitlements to the maximum amount of liquidated damages allowable under the AP1000 China contract of approximately \$25 million. To date, we have not met certain contractual delivery dates under the AP 1000 China and U.S. contracts; however there are significant uncertainties as to which parties are responsible for the delays, and we believe we have adequate legal defenses. Consequently, as a result of the above matters, we may incur significant costs or liabilities, including penalties, which could have a material adverse effect on our financial position, results of operations, or cash flows. As of December 31, 2019, the range of possible loss for liquidated damages on the WEC U.S. and China contracts is \$0 to \$55.5 million.

We are subject to liability under environmental laws.

Our business and facilities are subject to numerous federal, state, local, and foreign laws and regulations relating to the use, manufacture, storage, handling, and disposal of hazardous materials and other waste products. Environmental laws generally impose liability for investigation, remediation, and removal of hazardous materials and other waste products on property owners and those who dispose of materials at waste sites, whether or not the waste was disposed of legally at the time in question. We are currently addressing environmental remediation at certain current and former facilities, and we have been named as a potentially responsible party along with other organizations in a number of environmental clean-up sites and may be named in connection with future sites. We are required to contribute to the costs of the investigation and remediation and to establish reserves in our financial statements for future costs deemed probable and estimable. Although we have estimated and reserved for future environmental remediation costs, the final resolution of these liabilities may significantly vary from our estimates and could potentially have an adverse effect on our results of operations and financial position.

We use estimates when accounting for long-term contracts. Changes in estimates could affect our profitability and overall financial position.

Long-term contract accounting requires judgment relative to assessing risks, estimating contract revenues and costs, and making assumptions for schedule and technical issues. Due to the size and nature of many of our contracts, the estimation of total revenues and costs at completion is complicated and subject to many variables. For example, assumptions have to be made regarding the length of time to complete the contract as costs also include expected increases in wages and prices for materials. Similarly, assumptions have to be made regarding the future impact of efficiency initiatives and cost reduction efforts. Incentives, awards, price escalations, liquidated damages, or penalties related to performance on contracts are considered in estimating revenue and profit rates and are recorded when there is sufficient information to assess anticipated performance. It is possible that materially different amounts could be obtained, because of the significance of the judgments and estimation processes described above, if different assumptions were used or if the underlying circumstances were to change. Changes in underlying assumptions, circumstances, or estimates may have a material adverse effect upon future period financial reporting and performance. See "Critical Accounting Estimates and Policies" in Part II, Item 7 of this Form 10-K.

Our backlog is subject to reduction and cancellation, which could negatively impact our revenues and results of operations.

Backlog represents products or services that our customers have contractually committed to purchase from us. Total backlog includes both funded (unfilled orders for which funding is authorized, appropriated, and contractually obligated by the customer) and unfunded backlog (firm orders for which funding has not been appropriated and/or contractually obligated by the customer). We are a subcontractor to prime contractors for the vast majority of our government business; as such, substantially all amounts in backlog are funded. Backlog excludes unexercised contract options and potential orders under ordering type contracts (e.g. Indefinite Delivery / Indefinite Quantity). Backlog is adjusted for changes in foreign exchange rates and is reduced for contract cancellations and terminations in the period in which they occur. Backlog as of December 31, 2019 was \$2.2 billion. Backlog is subject to fluctuations and is not necessarily indicative of future sales. The U.S. Government may unilaterally modify or cancel its contracts. In addition, under certain of our commercial contracts, our customers may unilaterally modify or terminate their orders at any time for their convenience. Accordingly, certain portions of our backlog can be cancelled or reduced at the option of the U.S. Government and commercial customers. Our failure to replace cancelled or reduced backlog could negatively impact our revenues and results of operations.

We may be unable to protect the value of our intellectual property.

Obtaining, maintaining, and enforcing our intellectual property rights and avoiding infringing on the intellectual property rights of others are important factors to the operation of our business. While we take precautionary steps to protect our technological advantages and intellectual property and rely in part on patent, trademark, trade secret, and copyright laws, we cannot assure that the precautionary steps we have taken will completely protect our intellectual property rights. Because patent applications in the United States are maintained in secrecy until either the patent application is published or a patent is issued, we may not be aware of third-party patents, patent applications, and other intellectual property relevant to our products that may block our use of our intellectual property or may be used in third-party products that compete with our products and processes. When others infringe on our intellectual property rights, the value of our products is diminished, and we may incur substantial litigation costs to enforce our rights. Similarly, we may incur substantial litigation costs and the obligation to pay royalties if others claim we infringed on their intellectual property rights. When we develop intellectual property and technologies with funding from U.S. Government contracts, the government has the royalty-free right to use that property.

In addition to our patent rights, we also rely on unpatented technology, trade secrets, and confidential information. Others may independently develop substantially equivalent information and techniques or otherwise gain access to or disclose our technology. We may not be able to protect our rights in unpatented technology, trade secrets, and confidential information effectively. We generally require each of our employees and consultants to execute a confidentiality agreement at the commencement of an employment or consulting relationship with us. There is no guarantee that we will succeed in obtaining and retaining executed agreements from all employees or consultants. Moreover, these agreements may not provide effective protection of our information or, in the event of unauthorized use or disclosure, they may not provide adequate remedies.

Our future financial results could be adversely impacted by asset impairment charges.

As of December 31, 2019, we had goodwill and other intangible assets, net of accumulated amortization, of approximately \$1,647 million, which represented approximately 44% of our total assets. Our goodwill is subject to an impairment test on an annual basis and is also tested whenever events and circumstances indicate that goodwill may be impaired. Intangible assets (other than goodwill) are generally amortized over the useful life of such assets. In addition, from time to time, we may acquire or make an investment in a business that will require us to record goodwill based on the purchase price and the value of the acquired assets. We may subsequently experience unforeseen issues with such business that adversely affect the anticipated returns of the business or value of the intangible assets and trigger an evaluation of the recoverability of the recorded goodwill and intangible assets for such business. Future determinations of significant write-offs of goodwill or intangible assets as a result of an impairment test or any accelerated amortization of other intangible assets could have a material adverse impact on our financial condition and results of operations.

Our current debt, and debt we may incur in the future, could adversely affect our business and financial position.

As of December 31, 2019, we had \$761 million of debt outstanding. Our level of debt could have significant consequences for our business including: requiring us to use our cash flow to pay the principal and interest on our debt, reducing funds available for acquisitions and other investments in our business, making us vulnerable to economic downturns and increases in interest rates, limiting us from obtaining additional debt, and impacting our ability to pay dividends.

A percentage of our workforce is employed under collective bargaining agreements.

Approximately 7% of our workforce is employed under collective bargaining agreements, which from time to time are subject to renewal and negotiation. We cannot ensure that we will be successful in negotiating new collective bargaining agreements, that such negotiations will not result in significant increases in the cost of labor, or that a breakdown in such negotiations will not result in the disruption of our operations. Although we have generally enjoyed good relations with both our unionized and non-unionized employees, we may experience an adverse impact on our operating results if we are subject to labor actions.

Our earnings and margins depend in part on subcontractor performance, as well as raw material and component availability and pricing.

Our businesses depend on suppliers and subcontractors for raw materials and components. At times subcontractors perform services that we provide to our customers. We depend on these subcontractors and vendors to meet their contractual obligations in full compliance with customer requirements. Nonperformance or underperformance by subcontractors and vendors could materially impact our ability to perform obligations to our customers, which could result in a customer terminating our contract for default, expose us to liability, and substantially impair our ability to compete for future contracts and orders. Generally, raw

materials and purchased components are available from a number of different suppliers, though several suppliers are our sole source of certain components. If a sole-source supplier should cease or otherwise be unable to deliver such components, our operating results could be adversely impacted. In addition, our supply networks can sometimes experience price fluctuations. Our ability to perform our obligations as a prime contractor may be adversely affected if one or more of these suppliers are unable to provide the agreed-upon supplies or perform the agreed-upon services in a timely and cost-effective manner. While we have attempted to mitigate the effects of increased costs through price increases, there are no assurances that higher prices can effectively be passed through to our customers or that we will be able to fully offset the effects of higher raw materials costs through price increases on a timely basis.

Our business involves risks associated with complex manufacturing processes.

Our manufacturing processes depend on certain sophisticated and high-value equipment. Unexpected failures of this equipment may result in production delays, revenue loss, and significant repair costs. In addition, equipment failures could result in injuries to our employees. Moreover, the competitive nature of our businesses requires us to continuously implement process changes intended to achieve product improvements and manufacturing efficiencies. These process changes may at times result in production delays, quality concerns, and increased costs. Any disruption of operations at our facilities due to equipment failures or process interruptions could have a material adverse effect on our business.

We self-insure health benefits and may be adversely impacted by unfavorable claims experience.

We are primarily self-insured for our health benefits. If the number or severity of claims increases, or we are required to accrue or pay additional amounts because the claims prove to be more severe than our original assessment, our operating results would be adversely affected. Our future claims expense might exceed historical levels, which could reduce our earnings. We expect to periodically assess our self-insurance strategy. We are required to periodically evaluate and adjust our claims reserves to reflect our experience. However, ultimate results may differ from our estimates, which could result in losses over our reserved amounts. In addition, because we do not carry “stop loss” insurance, a significant increase in the number of claims that we must cover under our self-insurance retainage could adversely affect our profitability.

Increasing costs of certain employee and retiree benefits could adversely affect our financial position, results of operations, or cash flows.

Our earnings may be positively or negatively impacted by the amount of income or expense we record for our pension and other postretirement benefit plans. U.S. GAAP requires that we calculate income or expense for the plans using actuarial valuations. These valuations reflect assumptions relating to financial markets and other economic conditions. Changes in key economic indicators can change the assumptions. The most significant year-end assumptions used to estimate pension or other postretirement benefit expense for the following year are the discount rate, the expected long-term rate of return on plan assets, expected future medical cost inflation, and expected compensation increases. In addition, we are required to make an annual measurement of plan assets and liabilities, which may result in a significant change to equity through a reduction or increase to other comprehensive income. For a discussion regarding how our financial statements can be affected by pension and other postretirement benefit plans accounting policies, see “Management’s Discussion and Analysis—Critical Accounting Estimates and Policies—Pension and Other Postretirement Benefits” in Part II, Item 7 of this Form 10-K. Although U.S. GAAP expense and pension or other postretirement contributions are not directly related, the key economic factors that affect U.S. GAAP expense would also likely affect the amount of cash we would contribute to the pension or other postretirement plans. Potential pension contributions include both mandatory amounts required under federal law, Employee Retirement Income Security Act, and discretionary contributions to improve the plans’ funded status. An obligation to make contributions to pension plans could reduce the cash available for working capital and other corporate uses.

Future terror attacks, war, natural disasters, pandemic diseases, or other events beyond our control could adversely impact our businesses.

Despite our concerted effort to minimize risk to our production capabilities and corporate information systems and to reduce the effect of unforeseen interruptions through business continuity planning and disaster recovery plans, we could be adversely impacted by terror attacks, war, natural disasters such as hurricanes, floods, tornadoes, pandemic diseases, or other events such as strikes by the workforce of a significant customer or supplier. These risks could negatively impact demand for or supply of our products and could also cause disruption to our facilities or systems, which could also interrupt operational processes and adversely impact our ability to manufacture our products and provide services and support to our customers. We operate facilities in areas of the world that are exposed to natural disasters. Financial difficulties of our customers, delays by our customers in production of their products, high fuel prices, the concern of another major terrorist attack, and the overall decreased demand for our products could adversely affect our operating results and financial condition.

Our business, financial condition, and results of operations could be materially adversely affected by climate change regulations.

Climate change regulations at the federal, state, or local level or in international jurisdictions could require us to limit emissions, change our manufacturing processes, obtain substitute materials which may cost more or be less available, increase our investment in control technology for greenhouse gas emissions, fund offset projects, or undertake other costly activities. These regulations could significantly increase our costs and restrict our manufacturing operations by virtue of requirements for new equipment. New permits may be required for our current operations, or expansions thereof. Failure to timely receive permits could result in fines, suspension of production, or cessation of operations at one or more facilities. In addition, restrictions on carbon dioxide or other greenhouse gas emissions could result in significant costs such as higher energy costs and the passing down of carbon taxes, emission cap and trade programs, and renewable portfolio standards by utility companies. The cost of complying, or of failing to comply, with these and other climate change and emissions regulations could have an adverse effect on our operating results.

Increasing focus on environmental, social, and governance responsibility may impose additional costs on us and expose us to new risks.

Increasing focus on environmental, social, and governance responsibility may impose additional costs on us and expose us to new risks. Regulators, stockholders, and other interested constituencies have focused increasingly on the environmental, social, and governance practices of companies. Our customers may require us to implement environmental, social, or governance responsibility procedures or standards before they continue to do business with us. Additionally, we may face reputational challenges in the event that our environmental, social, or governance responsibility procedures or standards do not meet the standards set by certain constituencies. The occurrence of any of the foregoing could have a material adverse effect on our business, financial condition, and results of operations.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our corporate headquarters is located at a leased facility in Davidson, North Carolina. As of December 31, 2019, we had 155 facilities worldwide, including four corporate and shared-services facilities. Approximately 83% of our facilities operate as manufacturing and engineering, metal treatment, or aerospace overhaul plants, while the remaining 17% operate as selling and administrative office facilities. The number and type of facilities utilized by each of our reportable segments are summarized below:

Owned Facilities Location	Commercial/ Industrial	Defense	Power	Total
North America	14	1	3	18
Europe	10	—	—	10
Total	24	1	3	28

Leased Facilities Location	Commercial/ Industrial	Defense	Power	Total
North America	45	13	26	84
Europe	22	5	—	27
Asia	12	—	—	12
Total	79	18	26	123

The buildings on the properties referred to in this Item are well maintained, in good condition, and are suitable and adequate for current needs. Management believes that the productive capacity of our properties is adequate to meet our anticipated volume for the foreseeable future.

Item 3. Legal Proceedings.

In the ordinary course of business, the Corporation and its subsidiaries are subject to various pending claims, lawsuits, and contingent liabilities. We do not believe that the disposition of any of these matters, individually or in the aggregate, will have a material adverse effect on our consolidated financial condition, results of operations, and cash flows.

In December 2013, the Corporation, along with other unaffiliated parties, received a claim from Canadian Natural Resources Limited (CNRL) filed in the Court of Queen's Bench of Alberta, Judicial District of Calgary. The claim pertains to a January 2011 fire and explosion at a delayed coker unit at its Fort McMurray refinery that resulted in the injury of five CNRL employees, damage to property and equipment, and various forms of consequential loss such as loss of profit, lost opportunities, and business interruption. The fire and explosion occurred when a CNRL employee bypassed certain safety controls and opened an operating coker unit. In November 2019, all parties participated in a formal mediation and agreed to settle the claim for approximately \$38 million. Our portion of the settlement amount was \$6 million, which was fully paid in 2020 by our primary and excess insurance coverage. No admission of liability was made by us as part of the settlement agreement. We do not expect to incur any additional liabilities related to this claim.

We have been named in pending lawsuits that allege injury from exposure to asbestos. To date, we have not been found liable or paid any material sum of money in settlement in any asbestos-related case. We believe that the minimal use of asbestos in our past operations and the relatively non-friable condition of asbestos in our products make it unlikely that we will face material liability in any asbestos litigation, whether individually or in the aggregate. We maintain insurance coverage for these potential liabilities and we believe adequate coverage exists to cover any unanticipated asbestos liability.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

MARKET INFORMATION

Our common stock is listed and traded on the New York Stock Exchange (NYSE) under the symbol CW. As of January 1, 2020, we had approximately 3,150 registered shareholders of our common stock, \$1.00 par value.

DIVIDENDS

During 2019 and 2018, the Company paid quarterly dividends as follows:

	2019	2018
Common Stock		
First Quarter	\$ 0.15	\$ 0.15
Second Quarter	0.17	0.15
Third Quarter	0.17	0.15
Fourth Quarter	0.17	0.15

SECURITIES AUTHORIZED FOR ISSUANCE UNDER EQUITY COMPENSATION PLANS

The following table sets forth information regarding our equity compensation plans as of December 31, 2019, the end of our most recently completed fiscal year:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants, and rights	Weighted average exercise price of outstanding options, warrants, and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column)
Equity compensation plans approved by security holders	398,574 (a)	\$105.77	2,398,008 (b)
Equity compensation plans not approved by security holders	None	Not applicable	Not applicable

(a) Consists of 360,539 shares issuable upon exercise of outstanding options and vesting of performance share units, restricted shares, restricted stock units, and shares to non-employee directors under the 2005 and 2014 Omnibus Incentive Plan, and 38,035 shares issuable under the Employee Stock Purchase Plans.

(b) Consists of 1,530,256 shares available for future option grants under the 2014 Omnibus Incentive Plan, and 867,752 shares remaining available for issuance under the Employee Stock Purchase Plan.

Issuer Purchases of Equity Securities

The following table provides information about our repurchases of equity securities that are registered by us pursuant to Section 12 of the Securities Exchange Act of 1934, as amended, during the quarter ended December 31, 2019.

	Total Number of shares purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of a Publicly Announced Program	Maximum Dollar amount of shares that may yet be Purchased Under the Program
October 1 – October 31	36,210	\$127.01	358,381	\$208,333,969
November 1 – November 30	28,866	138.54	387,247	204,334,899
December 1 – December 31	29,877	140.55	417,124	200,135,555
For the quarter ended December 31	94,953	\$134.78	417,124	\$200,135,555

On December 2, 2019, the Corporation adopted two written trading plans in connection with its previously authorized share repurchase program, which allows for the purchase of its outstanding common stock up to \$200 million. The first trading plan will include share repurchases of \$50 million, to be executed equally throughout the year. The second trading plan will include opportunistic share repurchases up to \$100 million to be executed through a 10b5-1 program. The opportunistic share repurchases are to be made in accordance with the purchase grid attached to the Company's Form 8-K filed with the SEC on December 2, 2019. The Corporation plans to repurchase at least \$50 million of its common stock during the 2020 calendar year.

The following performance graph does not constitute soliciting material and should not be deemed filed or incorporated by reference into any of our other filings under the Securities Act or the Securities Exchange Act of 1934, except to the extent we specifically incorporate this information by reference therein.

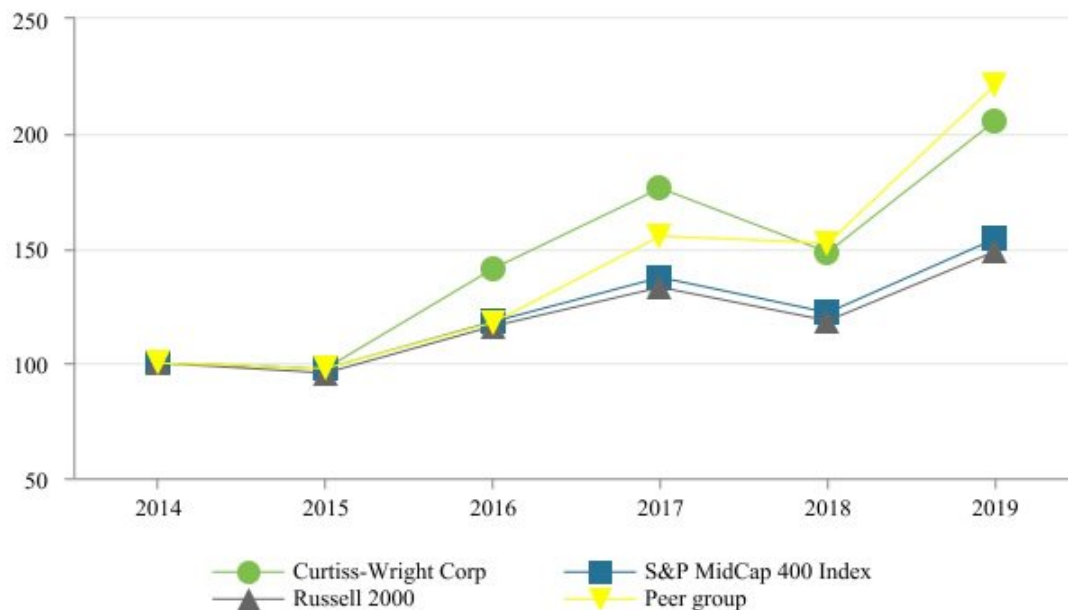
PERFORMANCE GRAPH

The following graph compares the annual change in the cumulative total return on our common stock during the last five fiscal years with the annual change in the cumulative total return of the Russell 2000 Index, the S&P MidCap 400 Index, and our self-constructed proxy peer group. The proxy peer group companies are as follows:

AAR Corp	ITT Inc.
Aerojet Rocketdyne Holdings, Inc.	Kaman Corp
Crane Co.	Moog Inc.
Cubic Corp	Spirit Aerosystems Holdings Inc.
EnPro Industries Inc.	Teledyne Technologies Inc.
FLIR Systems, Inc.	TransDigm Group Inc.
Hexcel Corp	Triumph Group Inc.
IDEX Corporation	Woodward Inc.

The graph assumes an investment of \$100 on December 31, 2014 and the reinvestment of all dividends paid during the following five fiscal years.

COMPARISON OF CUMULATIVE FIVE YEAR TOTAL RETURN



Company / Index	2014	2015	2016	2017	2018	2019
Curtiss-Wright Corp	100	97.77	141.23	175.92	148.15	205.49
S&P MidCap 400 Index	100	97.82	118.11	137.30	122.08	154.07
Russell 2000	100	95.59	115.95	132.94	118.30	148.49
Peer group	100	97.58	117.67	155.26	152.18	221.07

Item 6. Selected Financial Data.

The following table presents our selected financial data from continuing operations. The table should be read in conjunction with Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations*, and Item 8, *Financial Statements and Supplementary Data*, of this Annual Report on Form 10-K.

Five-Year Financial Highlights

	CONSOLIDATED SELECTED FINANCIAL DATA					
<i>(In thousands, except per share data)</i>	2019	2018	2017	2016	2015	
Net sales	\$ 2,487,961	\$ 2,411,835	\$ 2,271,026	\$ 2,108,931	\$ 2,205,683	
Earnings from continuing operations	307,583	275,749	214,891	189,382	192,248	
Total assets	3,764,261	3,255,385	3,236,321	3,037,781	2,989,611	
Total debt, net	760,639	762,556	814,139	966,298	953,205	
Earnings per share from continuing operations:						
Basic	\$ 7.20	\$ 6.28	\$ 4.86	\$ 4.27	\$ 4.12	
Diluted	\$ 7.15	\$ 6.22	\$ 4.80	\$ 4.20	\$ 4.04	
Cash dividends per share	\$ 0.66	\$ 0.60	\$ 0.56	\$ 0.52	\$ 0.52	

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Our Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) begins with an overview of our company, followed by economic and industry-wide factors impacting our company and the markets we serve, a discussion of the overall results of operations, and finally a more detailed discussion of those results within each of our reportable operating segments.

COMPANY ORGANIZATION

Curtiss-Wright Corporation and its subsidiaries is a global, diversified manufacturing and service company that designs, manufactures, and overhauls precision components and provides highly engineered products and services to the defense, general industrial, commercial aerospace, and power generation markets. We report our operations through our Commercial/Industrial, Defense, and Power segments. We are positioned as a market leader across a diversified array of niche markets through engineering and technological leadership, precision manufacturing, and strong relationships with our customers. Our overall strategy is to be a balanced and diversified company, less vulnerable to cycles or downturns in any one market, with a focus on establishing and expanding strong technological breadth, market positions, and financial performance.

Impacts of inflation, pricing, and volume

We have not historically been and do not expect to be significantly impacted by inflation. Increases in payroll costs and any increases in raw material costs that we have encountered are generally offset through lean manufacturing activities or price increases, if our terms and conditions provide for such increases. We have consistently made annual investments in capital that deliver efficiencies and cost savings. The benefits of these efforts generally offset the margin impact of competitive pricing conditions in all of the markets we serve.

Analytical Definitions

Throughout MD&A, the terms "incremental" and "organic" are used to explain changes from period to period. The term "incremental" is used to highlight the impact that acquisitions and divestitures had on the current year results. The results of operations for acquisitions are incremental for the first twelve months from the date of acquisition. Additionally, the results of operations of divested businesses are removed from the comparable prior year period for purposes of calculating "organic" and "incremental" results. The definition of "organic" excludes the effect of foreign currency translation.

Market Analysis and Economic Factors

Economic Factors Impacting Our Markets

Curtiss-Wright Corporation is a global, diversified manufacturing and service company that designs, manufactures, and overhauls precision components and provides highly engineered products and services to the aerospace, defense, general industrial, and power generation markets. Many of Curtiss-Wright's industrial businesses are driven in large part by global economic growth, primarily led by operations in the U.S., Canada, Europe, and China. During January 2020, it was reported that a coronavirus outbreak originated in China, which resulted in travel in and out of China being restricted along with the temporary halting of manufacturing activities. However, it is too premature to accurately predict the impact that such outbreak will have on business activity or our operations.

The U.S. economy, as measured by real gross domestic product (GDP), has slowly improved over the last ten years, aided by decreased levels of unemployment, improvements in the housing market, and a low interest rate environment. In 2019, U.S. GDP is expected to show modest growth of 2.3%, compared to GDP growth of 2.9% and 2.4% in 2018 and 2017, respectively. The projected slowing growth is primarily due to the lengthy impact of U.S./China trade tensions and ongoing concerns about global recessionary conditions. Looking ahead to 2020, economists have mixed views on the broader U.S. economy, with current estimates for U.S. GDP indicating a growth rate of approximately 2.0%, despite the administration's goal to raise the pace of expansion to at least 3.0% per year through increased fiscal stimulus.

Meanwhile, the global environment's rebound in economic activity that began in mid-2016 has moderated from recent peak levels, influenced by international trade tensions, tightening financial conditions, and rising geopolitical uncertainty. As a result, 2020 GDP growth in world economies is expected to grow by approximately 3.3%, up compared to the 2019 growth rate of 2.9%, but below the 2018 growth rate of 3.6%, according to the International Monetary Fund. Looking ahead to the next few years, we remain cautiously optimistic that our economically-sensitive commercial and industrial markets will improve based on normalized global conditions.

Defense

We have a well-diversified portfolio of products and services that supply all branches of the U.S. military, with content on many high performance programs and platforms, as well as a growing international defense business. A significant portion of our defense business operations is attributed to the United States market, and characterized by long-term programs and contracts driven primarily by the Department of Defense (DoD) budgets and funding levels.

The U.S. Defense budget serves as a leading indicator of our growth in the defense market. Following across-the-board sequestration mandated by the BCA, defense spending and related supplemental budgets bottomed in 2015. However, growth has stabilized in recent years. In early 2018, Congress signed a bill to provide relief against the spending caps associated with the BCA. In addition, the Fiscal Year 2019 Defense Appropriations Bill, signed by the President in September 2018, was the first to be signed into law on time in over a decade. Most recently, the two-year, Bipartisan Budget Act signed by the President in August 2019 brought an improved sense of security to federal agencies, essentially cancelling the last two years of the BCA and its sequestration caps, while setting solid topline spending figures for 2020 and 2021 in excess of \$700 billion. Looking ahead, the Fiscal Year 2021 budget request is expected to be approximately \$740 billion, essentially in line with the Fiscal Year 2020 budget.

We derive revenue from the naval defense, aerospace defense, and ground defense markets. In the naval defense market, we expect continued solid funding for U.S. shipbuilding programs, particularly as it relates to production on the Ford class aircraft carrier, as well as Columbia class and Virginia class submarines. We have a long legacy of providing products that support nuclear propulsion systems on naval vessels. In addition, through our service centers, we are a critical provider of ship repair and maintenance for the U.S. Navy's Atlantic and Pacific fleets. In the aerospace defense market, we expect to benefit from increased funding levels on Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), electronic warfare, unmanned systems, and communications programs. As a leading supplier of COTS and COTS+ solutions, we continue to demonstrate that electronics technology will enhance our ability to design and develop future generations of advanced systems and products for high performance applications, while also meeting the military's Size, Weight, and Power considerations. We are also a leading designer and manufacturer of high-technology data acquisition and comprehensive flight test instrumentation systems. In the ground defense market, the modernization of the existing U.S. ground vehicle fleet is expected to recover slowly, while international demand should remain solid, particularly for our turret drive stabilization systems (TDSS).

While we monitor the budget process as it relates to programs in which we participate, we cannot predict the ultimate impact of future DoD budgets, which tend to fluctuate year-by-year and program-by-program.

Commercial Aerospace

Curtiss-Wright derives revenue from the global commercial aerospace market, principally to the commercial jet market, and to a lesser extent the regional jet and commercial helicopter markets. Our primary focus in this market is OEM products and services for commercial jets, which is highly dependent on new aircraft production from our primary customers, Boeing and Airbus. We provide a combination of flight control and utility actuation systems, sensors, and other sophisticated electronics, as well as shot and laser peening services utilized on highly stressed components of turbine engine fan blades, landing gear, and aircraft structures.

Steady growth in airline travel, along with the demand for and delivery of new aircraft to replace an aging fleet, continue to be key drivers in the commercial aerospace market. Fiscal 2011 marked the beginning of a multi-year production up-cycle for the commercial aerospace market. This up-cycle has been driven by increases in production by Boeing and Airbus on both legacy and new aircraft, particularly narrow-body aircraft, and is further supported by their strong backlogs. Additionally, the steady decline in oil prices during the past few years has been a key contributor to increased passenger growth, as declining fuel prices have led to cheaper airfares for consumers. According to the International Air Transport Association, air travel continues to be solid with passenger growth expected to be approximately 4.1% in 2020. The projected 2020 rate of growth is essentially in-line with 2019 but slower than the 20-year trend. Industry data supports a continued, steady increase in commercial aircraft deliveries to meet this growing demand.

While we closely monitor these industry metrics, our success and future growth in the commercial aerospace market is primarily tied to the growth in aircraft production rates, the timing of our order placement, and continued partnering with aerospace original equipment manufacturers.

Power Generation

We derive revenue from the commercial nuclear power generation market, where we supply a variety of highly engineered products and services, including reactor coolant pumps, control rod drive mechanisms, valves, motors, spent fuel management, containment doors, bolting solutions, enterprise resource planning, plant process controls, and coating services. We provide equipment and services to both the aftermarket and new build markets and have content on every reactor operating in the U.S. today.

According to the Nuclear Regulatory Commission (NRC), nuclear power comprises approximately 20% of all electric power produced in the United States, with 96 reactors operating across 58 nuclear power plants in 29 states. Our growth opportunities for aftermarket products and services are driven by plant aging, plant closures, requirements for planned outages, plant life extensions (from the end of their original 40-year operating lives to 60-year and now 80-year lives), the levying of regulatory requirements, suppliers abandoning the commercial nuclear market, and plants seeking technology and innovation advances.

One of the industry's most significant challenges is electricity market competitiveness, primarily driven by sustained low natural gas prices. As a result, the industry has been tasked with reassessing operating practices, improving efficiency, and reducing costs to help keep nuclear power competitive in a changing electricity market, which are collectively referred to as "Delivering the Nuclear Promise." Additionally, U.S. reactor operators were faced with increased security and post-Fukushima regulatory requirements over most of the past decade. All of these factors contributed to plant operators diverting and deferring their typical plant capital expenditure budgets significantly away from planned maintenance. However, in late 2017, as those necessary requirements abated and plant operators resumed a more normalized maintenance schedule, the industry began to turn the corner. As a result, we expect increased opportunities for our vast portfolio of advanced nuclear technologies moving forward.

Longer term, there are several factors that are expected to drive global commercial nuclear power demand. The Energy Information Administration forecasts that worldwide electricity generation is expected to increase at an average annual rate of 1.8% through 2050. Continued growth in global demand, especially in developing countries with limited power supply such as China and India, will require increased capacity. In addition, the continued supply constraints and environmental concerns attributed to the current dependence on fossil fuels have led to a greater appreciation of the value of nuclear technology as the most efficient and environmentally friendly source of energy available today. As a result, we expect growth opportunities in this market both domestically and internationally, although the timing of orders remains uncertain.

We also play an important role in the new build market for the Westinghouse AP1000 reactor design, for which we are a supplier of RCPs and also expect to supply a variety of ancillary plant products and services. Domestically, two new build reactors remain under construction in Georgia utilizing the AP1000 design. On a global basis, nuclear plant construction is active. Currently, there are approximately 53 new reactors under construction across 18 countries, with approximately 110

planned and 330 proposed over the next several decades according to the World Nuclear Organization. In particular, China intends to expand its nuclear power capabilities significantly through the construction of new nuclear power plants over the next few decades, led by the successful start-up and operation of the first two AP1000 plants (four reactors) in late 2018 and early 2019, which are the first Generation III+ reactors in operation worldwide. We continue to expect to play a role in new build nuclear plant construction with our largest opportunities in China and India.

Our future success in this industry will be led by new order activity for our vast array of nuclear technologies due to ongoing maintenance and upgrade requirements on operating nuclear plants, a renewed interest in products to aid safety and extend the reliability of existing reactors, and the continued emphasis on global nuclear power construction.

General Industrial

Revenue derived from our widely diversified offering to the general industrial market consists of industrial sensors and control systems, critical-function valves and valve systems, as well as surface treatment services. We supply our products and services to OEMs and aftermarket industrial customers, including the transportation, commercial trucking, off-road equipment, agriculture, construction, automotive, chemical, and oil and gas industries. Our performance in these markets is typically sensitive to the performance of the U.S. and global economies, with changes in global GDP rates and industrial production driving our sales, particularly for our surface treatment services.

One of the key drivers within our general industrial market is our sensors and controls systems products, most notably electronic throttle controls, shift controls, joysticks, power management systems, and traction control systems. These products serve the on-and-off highway, medical mobility, and specialty vehicles markets. Increased industry demand for electronic control systems and sensors has been driven by the need for improved operational efficiency, safety, repeatability, reduced emissions, enhanced functionality, and greater fuel efficiencies to customers worldwide. Key to our future growth is expanding the human-machine interface technology portfolio and providing a complete system solution to our customers. Existing and emerging trends in commercial vehicle safety, emissions control, and improved driver efficiency are propelling commercial vehicle OEMs toward higher performance subsystems. These trends are accelerating the evolution from discrete human machine interface components towards a more integrated vehicle interface architecture. Meanwhile, our surface treatment services, which include shot and laser peening, engineered coatings, and analytical testing services, are used to increase the safety, reliability, and longevity of components operating in harsh environments. Sales are primarily driven by global demand from general industrial customers.

We also service the oil and gas, chemical, and petrochemical industries through numerous industrial valve products, in which nearly all of our industrial valve sales are to the downstream markets. We maintain a global maintenance, repair, and overhaul (MRO) business for our pressure-relief valve technologies as refineries opportunistically service or upgrade equipment that has been operating at or near full capacity. We also produce severe service, operation-critical valves for the power and process industries. Sales in these industries are driven by global supply and demand, crude oil prices, industry regulations, and the natural gas market. Over the long run, we believe improved economic conditions and continued global expansion will be key drivers for future growth of our severe service and operation-critical valves serving the process industry.

RESULTS OF OPERATIONS

The following MD&A is intended to help the reader understand the results of operations and financial condition of the Corporation for the year ended December 31, 2019, as compared to the year ended December 31, 2018. Discussion and analysis of our financial condition and results of operations for the year ended December 31, 2018, as compared to the year ended December 31, 2017, is contained in our 2018 Annual Report on Form 10-K, filed with the SEC on February 27, 2019.

	Year Ended December 31,		Percent change
	2019	2018	2019 vs. 2018
<i>(In thousands, except percentages)</i>			
Sales:			
Commercial/Industrial	\$ 1,239,881	\$ 1,209,178	3 %
Defense	579,329	554,374	5 %
Power	668,751	648,283	3 %
Total sales	\$ 2,487,961	\$ 2,411,835	3 %
Operating income:			
Commercial/Industrial	\$ 196,455	\$ 182,669	8 %
Defense	129,653	128,446	1 %
Power	112,954	98,858	14 %
Corporate and eliminations	(35,109)	(36,347)	3 %
Total operating income	\$ 403,953	\$ 373,626	8 %
Interest expense	31,347	33,983	(8) %
Other income, net	23,856	16,596	44 %
Earnings before income taxes	396,462	356,239	11 %
Provision for income taxes	(88,879)	(80,490)	10 %
Net earnings	\$ 307,583	\$ 275,749	12 %
New orders	\$ 2,579,617	\$ 2,426,682	
Backlog	\$ 2,166,764	\$ 2,032,451	

Components of sales and operating income growth (decrease):

	2019 vs. 2018	
	Sales	Operating Income
Organic	2 %	6 %
Acquisitions	2 %	1 %
Foreign currency	(1)%	1 %
Total	3 %	8 %

Sales for the year increased \$76 million, or 3%, to \$2,488 million, compared with the prior year period. On a segment basis, sales from the Commercial/Industrial, Defense, and Power segments increased \$31 million, \$25 million, and \$20 million, respectively. Changes in sales by segment are discussed in further detail in the "Results by Business Segment" section below.

Operating income for the year increased \$30 million, or 8%, to \$404 million, and operating margin increased 70 basis points compared with 2018. The increases in operating income and operating margin were primarily due to favorable overhead absorption on higher naval defense sales and the absence of first year purchase accounting costs from our DRG acquisition in the Power segment. Operating income and operating margin also benefited from gains recognized on the sales of a product line and building in the Commercial/Industrial segment. The benefits of our ongoing margin improvement initiatives were recognized across all segments. These increases were partially offset by an unfavorable shift in mix within our defense electronic products, higher research and development expenses, and favorable contract adjustments in the prior year period which did not recur in the Defense segment as well as the impact of tariffs in the Commercial/Industrial segment. The timing of sales on the AP1000 China Direct program negatively impacted operating income in the Power segment.

Non-segment operating expense of \$35 million was essentially flat compared to the prior year period.

Interest expense for the year decreased \$3 million, or 8%, to \$31 million, primarily due to a discretionary \$50 million prepayment on our 2013 Notes in October 2018.

Other income, net for the year increased \$7 million, or 44%, to \$24 million, primarily due to higher income related to our pension and other post-retirement benefit plans.

The effective tax rates for 2019 and 2018 were 22.4% and 22.6%, respectively. The decrease in the effective tax rate in 2019, as compared to 2018, was primarily due to additional tax expense associated with the Tax Act for foreign withholding taxes recognized in the prior year period as well as the current period benefit related to research and development credits and foreign-derived intangible income (FDII) deduction. These decreases were primarily offset by reduced stock compensation benefits and the absence of a favorable prepaid and repair method change recognized in the prior year period. Refer to Note 12 to the Consolidated Financial Statements for more information.

New orders increased \$153 million, or 6%, from the prior year period to \$2,580 million, primarily due to strong organic growth in naval defense orders across all segments. New orders also benefited from higher demand for our commercial aerospace products in the Commercial/Industrial segment. These increases were partially offset by a decline in new orders for our industrial vehicle, industrial controls, and industrial valve products in the Commercial/Industrial segment. Changes in new orders by segment are discussed in further detail in the "Results by Business Segment" section below.

Comprehensive income (loss)

Pension and postretirement adjustments within comprehensive income during the year ended December 31, 2019 were a \$29 million loss, compared with a \$19 million loss for the prior year period. The loss during the current period was primarily due to an increase in the discount rate, partially offset by higher asset returns. The loss in the prior period was primarily due to lower asset returns, partially offset by a decrease in the discount rate.

Foreign currency translation adjustments during the year ended December 31, 2019 resulted in a gain of \$18 million, compared to a foreign currency translation loss of \$52 million in the comparable prior period. The comprehensive gain during the current period was primarily attributed to increases in the British Pound and Canadian dollar with the prior period comprehensive loss primarily attributed to decreases in the British Pound and Canadian dollar.

RESULTS BY BUSINESS SEGMENT

Commercial/Industrial

Sales in the Commercial/Industrial segment are primarily generated from the general industrial and commercial aerospace markets and, to a lesser extent, the defense and power generation markets.

The following tables summarize sales, operating income and margin, and new orders within the Commercial/Industrial segment.

	Year Ended December 31,		Percent
	2019	2018	Change
			2019 vs.
			2018
<i>(In thousands, except percentages)</i>			
Sales	\$ 1,239,881	\$ 1,209,178	3 %
Operating income	196,455	182,669	8 %
Operating margin	15.8 %	15.1 %	70 bps
New orders	\$ 1,312,579	\$ 1,225,407	7 %
Backlog	\$ 665,832	\$ 596,468	12 %

Components of sales and operating income growth (decrease):

	2019 vs. 2018	
	Sales	Operating Income
Organic	4 %	8 %
Acquisitions	— %	— %
Foreign currency	(1)%	— %
Total	3 %	8 %

Sales increased \$31 million, or 3%, to \$1,240 million, from the comparable prior year period, primarily due to higher sales in the aerospace defense, commercial aerospace, and naval defense markets. In the aerospace defense market, sales increased \$21 million primarily due to higher demand for actuation systems on the F-35 fighter jet program. Sales in the commercial aerospace market increased \$19 million primarily due to higher demand for sensors products. The naval defense market benefited from higher sales of \$9 million primarily due to increased production on the Virginia-class submarine program. These increases were partially offset by lower general industrial sales of \$14 million primarily due to lower demand for surface treatment services. Unfavorable foreign currency translation, which is reflected in the results above, reduced sales \$12 million.

Operating income increased \$14 million, or 8%, to \$196 million, and operating margin increased 70 basis points to 15.8%. The increases in operating income and operating margin were primarily due to favorable overhead absorption on higher sales and gains recognized on the sales of a product line and building. Operating income and operating margin also benefited from our ongoing margin improvement initiatives. These increases were partially offset by the impact of tariffs.

New orders increased \$87 million as compared to the prior year, primarily due to strong organic growth in naval defense and commercial aerospace orders of \$63 million and \$60 million, respectively. These increases were partially offset by a decline in new orders of \$43 million for our industrial vehicle, industrial controls, and industrial valve products.

Defense

Sales in the Defense segment are primarily to the defense markets and, to a lesser extent, the commercial aerospace and the general industrial markets.

The following tables summarize sales, operating income and margin, and new orders, within the Defense segment.

	Year Ended December 31,		Percent Change
	2019	2018	2019 vs. 2018
<i>(In thousands, except percentages)</i>			
Sales	\$ 579,329	\$ 554,374	5 %
Operating income	129,653	128,446	1 %
Operating margin	22.4 %	23.2 %	(80 bps)
New orders	\$ 590,452	\$ 553,384	7 %
Backlog	\$ 584,048	\$ 522,994	12 %

Components of sales and operating income growth (decrease):

	2019 vs. 2018	
	Sales	Operating Income
Organic	3 %	— %
Acquisitions	2 %	— %
Foreign currency	— %	1 %
Total	5 %	1 %

Sales increased \$25 million, or 5%, to \$579 million, from the comparable prior year period, primarily due to higher sales in the aerospace defense and naval defense markets. In the aerospace defense market, sales increased \$19 million primarily due to the

incremental impact from our TCG acquisition as well as higher demand for embedded computing equipment on various UAV and helicopter programs. Sales in the naval defense market increased \$16 million primarily due to higher production on the Virginia-class submarine and DDG-51 guided missile destroyer programs. These increases were partially offset by lower general industrial sales of \$8 million due to the timing of an automotive contract completed in the prior year period.

Operating income of \$130 million was essentially flat compared with the same period in 2018, while operating margin decreased 80 basis points to 22.4%. Higher sales and favorable overhead absorption on our naval defense products as well as the benefits of our ongoing margin improvement initiatives were essentially offset by an unfavorable shift in mix within our defense electronic products, higher research and development expenses, and favorable contract adjustments within our naval defense business in the prior year period which did not recur.

New orders increased \$37 million as compared to the prior year primarily due to strong organic growth in our naval defense market, which contributed \$28 million in new orders.

Power

Sales in the Power segment are primarily to the power generation and naval defense markets.

The following tables summarize sales, operating income and margin, and new orders, within the Power segment.

	Year Ended December 31,		Percent Change
	2019	2018	2019 vs. 2018
<i>(In thousands, except percentages)</i>			
Sales	\$ 668,751	\$ 648,283	3 %
Operating income	112,954	98,858	14 %
Operating margin	16.9 %	15.2 %	170 bps
New orders	\$ 676,586	\$ 647,891	4 %
Backlog	\$ 916,884	\$ 912,989	— %

Components of sales and operating income growth (decrease):

	2019 vs. 2018	
	Sales	Operating Income
Organic	(1)%	11 %
Acquisitions	4 %	3 %
Foreign currency	— %	— %
Total	3 %	14 %

Sales increased \$20 million, or 3%, to \$669 million, from the comparable prior year period. In the naval defense market, sales increased \$57 million primarily due to higher production on the Virginia-class submarine and CVN-80 aircraft carrier programs, which benefited sales \$20 million and \$16 million, respectively. The naval defense market also benefited from higher spares and service center sales of \$17 million. These increases were partially offset by lower sales of \$38 million in the power generation market primarily due to the timing of production on the AP1000 China Direct program.

Operating income increased \$14 million, or 14%, to \$113 million and operating margin increased 170 basis points to 16.9%. The increases in operating income and operating margin were primarily due to favorable overhead absorption on higher naval defense sales and the absence of first year purchase accounting costs from our DRG acquisition, partially offset by lower sales on the AP1000 China Direct program.

New orders increased \$29 million as compared to the prior year primarily due to strong organic growth in the naval defense market, which contributed \$33 million in new orders.

SUPPLEMENTARY INFORMATION

The table below depicts sales by end market. End market sales help provide an enhanced understanding of our businesses and the markets in which we operate. The table has been included to supplement the discussion of our consolidated operating results.

Net Sales by End Market

<i>(In thousands, except percentages)</i>	Year Ended December 31,		Percent change
	2019	2018	2019 vs. 2018
<i>Defense markets:</i>			
Aerospace	\$ 416,841	\$ 376,951	11 %
Ground	93,432	97,131	(4)%
Naval	568,776	486,476	17 %
Total Defense	\$ 1,079,049	\$ 960,558	12 %
<i>Commercial markets:</i>			
Aerospace	\$ 433,038	\$ 414,422	4 %
Power Generation	392,173	431,793	(9)%
General Industrial	583,701	605,062	(4)%
Total Commercial	\$ 1,408,912	\$ 1,451,277	(3)%
Total Curtiss-Wright	\$ 2,487,961	\$ 2,411,835	3 %

Defense sales increased \$118 million, or 12%, to \$1,079 million, as compared to the prior year period, primarily due to higher sales in the naval and aerospace defense markets. Higher sales in the naval defense market were primarily due to increased production on the Virginia-class submarine and CVN-80 aircraft carrier programs, which benefited sales \$41 million and \$11 million, respectively. The naval defense market also benefited from higher spares and service center sales of \$19 million and increased production of helicopter handling systems on the DDG-51 guided missile destroyer program, which resulted in a sales increase of \$8 million. Sales in the aerospace defense market increased due to the incremental impact from our TCG acquisition, which contributed \$11 million in sales. We also experienced higher demand for actuation systems on the F-35 fighter jet program as well as embedded computing products supporting various helicopter and UAV programs, which resulted in sales increases of \$9 million, \$11 million, and \$10 million, respectively.

Commercial sales decreased \$42 million, or 3%, to \$1,409 million, primarily due to lower sales in the power generation and general industrial markets. The sales decrease in the power generation market was primarily due to the timing of production on the AP1000 China Direct program, which reduced sales \$33 million. In the general industrial market, we experienced lower demand for our surface treatment services and were negatively impacted by the timing of an automotive contract completed in the prior year period. These decreases were partially offset by sales increases in the commercial aerospace market, primarily due to higher demand for sensors products.

Liquidity and Capital Resources

Sources and Uses of Cash

We derive the majority of our operating cash inflow from receipts on the sale of goods and services and cash outflow for the procurement of materials and labor; cash flow is therefore subject to market fluctuations and conditions. Most of our long-term contracts allow for several billing points (progress or milestone) that provide us with cash receipts as costs are incurred throughout the project rather than upon contract completion, thereby reducing working capital requirements.

Consolidated Statement of Cash Flows

<i>(In thousands)</i>	Year ended December 31,	
	2019	2018
Net cash provided by (used in):		
Operating activities	\$ 421,404	\$ 336,273
Investing activities	(240,040)	(255,516)
Financing activities	(68,145)	(263,639)
Effect of exchange rates	1,748	(16,172)
Net increase (decrease) in cash and cash equivalents	\$ 114,967	\$ (199,054)

Operating Activities

Cash provided by operating activities increased \$85 million to \$421 million from the comparable prior year period. The increase in net cash provided was primarily due to a prior year period voluntary pension contribution of \$50 million. Net cash provided during the current period also benefited from higher collections of accounts receivable and lower inventory receipts, partially offset by higher disbursements.

Investing Activities

Capital Expenditures

Our capital expenditures were \$70 million and \$53 million for 2019 and 2018, respectively. The increase in capital expenditures was primarily due to additional investment in the new DRG facility in South Carolina. For 2020, we anticipate capital expenditures of approximately \$65 million to \$75 million.

Divestitures

No material divestitures took place during 2019 or 2018.

Acquisitions

In 2019, we acquired two businesses for a total purchase price of \$185 million. In 2018, we acquired one business for a total purchase price of \$210 million.

Future acquisitions will depend, in part, on the availability of financial resources at a cost of capital that meet our stringent criteria. As such, future acquisitions, if any, may be funded through the use of our cash and cash equivalents, through additional financing available under the credit agreement, or through new financing alternatives.

Financing Activities

Debt Issuances

There were no debt issuances in 2019 or 2018. In 2018, we made a discretionary \$50 million prepayment on our 2013 Notes.

Revolving Credit Agreement

As of December 31, 2019, the Corporation had no borrowings outstanding under the Revolving Credit Agreement (the Credit Agreement or credit facility) and \$33 million in letters of credit supported by the credit facility. The unused credit available under the Credit Agreement as of December 31, 2019 was \$467 million, which could be borrowed in full without violating any of our debt covenants.

Repurchase of Common Stock

During 2019, the Company repurchased approximately 417,000 shares of its common stock for \$51 million. In 2018, the Company repurchased approximately 1,700,000 shares of its common stock for \$199 million.

Dividends

During 2019 and 2018, the Company made dividend payments of approximately \$28 million and \$26 million, respectively.

Capital Resources

Cash in Foreign Jurisdictions

(In thousands)	As of December 31,	
	2019	2018
United States of America	\$ 220,782	\$ 127,600
United Kingdom	50,761	29,731
European Union	41,779	43,703
Canada	34,026	35,526
China	26,278	22,229
Other foreign countries	17,407	17,277
Total cash and cash equivalents	\$ 391,033	\$ 276,066

Cash and cash equivalents as of December 31, 2019 and December 31, 2018 were \$391 million and \$276 million, respectively. The increase in cash held by U.S. subsidiaries during 2019 as compared to 2018 was primarily due to cash repatriation of \$86 million. The increase in cash held by foreign subsidiaries during 2019 as compared to 2018 was primarily due to increased net cash receipts in the current period. There are no legal or economic restrictions on the ability of any of our subsidiaries to transfer funds, absent certain regulatory approvals in China, where approximately \$26 million of our foreign cash resides. Refer to Note 12 to the Consolidated Financial Statements for impacts on our foreign undistributed earnings due to the Tax Act.

Cash Utilization

Management continually evaluates cash utilization alternatives, including share repurchases, acquisitions, and increased dividends to determine the most beneficial use of available capital resources. We believe that our cash and cash equivalents, cash flow from operations, available borrowings under the credit facility, and ability to raise additional capital through the credit markets are sufficient to meet both the short-term and long-term capital needs of the organization, including the return of capital to shareholders through dividends and share repurchases and growing our business through acquisitions.

Debt Compliance

As of December 31, 2019, we were in compliance with all debt agreements and credit facility covenants, including our most restrictive covenant, which is our debt to capitalization ratio limit of 60%. As of December 31, 2019, we had the ability to incur total additional indebtedness of \$1.8 billion without violating our debt to capitalization covenant.

Future Commitments

Cash generated from operations should be adequate to meet our planned capital expenditures of approximately \$65 million to \$75 million and expected dividend payments of approximately \$28 million in 2020. There can be no assurance, however, that we will continue to generate cash from operations at the current level, or that these projections will remain constant throughout 2020. If cash generated from operations is not sufficient to support these operating requirements and investing activities, we may be required to reduce capital expenditures, borrow from our existing credit line, refinance a portion of our existing debt, or obtain additional financing. While all companies are subject to economic risk, we believe that our cash and cash equivalents, cash flow from operations, and available borrowings are sufficient to meet both the short-term and long-term capital needs of the organization.

In January 2020 and February 2018, we made discretionary pension contributions of \$150 million and \$50 million, respectively, to the Curtiss-Wright Pension Plan. For more information on our pension and other postretirement benefits plans, see Note 16 to the Consolidated Financial Statements.

The following table quantifies our significant future contractual obligations and commercial commitments as of December 31, 2019:

<i>(In thousands)</i>	Total	2020	2021	2022	2023	2024	Thereafter
Debt Principal Repayments	\$ 750,000	\$ —	\$ 100,000	\$ —	\$ 202,500	\$ —	\$ 447,500
Operating Leases	205,479	32,528	29,729	23,432	21,168	18,640	79,982
Interest Payments on Fixed Rate Debt	168,821	29,710	29,465	25,870	23,248	18,378	42,150
Total	\$ 1,124,300	\$ 62,238	\$ 159,194	\$ 49,302	\$ 246,916	\$ 37,018	\$ 569,632

We do not have material purchase obligations. Most of our raw material purchase commitments are made directly pursuant to specific contract requirements.

We enter into standby letters of credit agreements and guarantees with financial institutions and customers primarily relating to future performance on certain contracts to provide products and services and to secure advance payments we have received from certain international customers. As of December 31, 2019, we had contingent liabilities on outstanding letters of credit due as follows:

<i>(In thousands)</i>	Total	2020	2021	2022	2023	2024	Thereafter
Letters of Credit ⁽¹⁾	\$ 32,554	\$ 26,582	\$ 2,373	\$ 542	\$ 2,601	\$ 456	\$ —

⁽¹⁾ Amounts exclude bank guarantees of approximately \$10.8 million.

Critical Accounting Estimates and Policies

Our consolidated financial statements and accompanying notes are prepared in accordance with accounting principles generally accepted in the United States of America. Preparing consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, and expenses. These estimates and assumptions are affected by the application of our accounting policies. Critical accounting policies are those that require application of management's most difficult, subjective, or complex judgments, often as a result of the need to make estimates about the effects of matters that are inherently uncertain and may change in subsequent periods. We believe that the following are some of the more critical judgment areas in the application of our accounting policies that affect our financial condition and results of operations:

Revenue Recognition

We account for revenues in accordance with ASC 606, *Revenue from Contracts with Customers*, which was adopted as of January 1, 2018 on a modified retrospective basis. Under ASC 606, revenue is recognized when control of a promised good and/or service is transferred to a customer at a transaction price that reflects the consideration that we expect to be entitled to in exchange for that good and/or service. The unit of account is a performance obligation whereby a contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when the respective performance obligation is satisfied. In certain instances, the transaction price may include estimated amounts of variable consideration including but not limited to incentives, awards, price escalations, liquidated damages, and penalties, only to the extent that it is probable that a significant reversal of cumulative revenue recognized to date around such variable consideration will not occur. We estimate variable consideration to be included in the transaction price using either the expected value method or most likely amount method, contingent upon the facts and circumstances of the specific arrangement. Variable consideration associated with our respective arrangements is not typically constrained.

Performance obligations are satisfied either at a point-in-time or on an over-time basis. Contracts that qualify for over-time revenue recognition are generally associated with the design, development, and manufacture of highly engineered industrial products used in commercial and defense applications and generally span between 2-5 years in duration. Revenue recognized on an over-time basis for the year ended December 31, 2019 accounted for approximately 49% of total net sales. Typically, over-time revenue recognition is based on the utilization of an input measure used to measure progress, such as costs incurred to date relative to total estimated costs. Application of an over-time revenue recognition method requires the use of reasonable and dependable estimates of future material, labor, and overhead costs that will be incurred as well as a disciplined cost estimating system in which all functions of the business are integrally involved. These estimates are determined based on industry knowledge and experience of our engineers, project managers, and financial staff. Changes in total estimated costs are

recognized using the cumulative catch-up method of accounting which recognizes the cumulative effect of the changes on current and prior periods in the current period. During the twelve months ended December 31, 2019, 2018, and 2017, there were no significant changes in estimated contract costs.

If a performance obligation does not qualify for over-time revenue recognition, revenue is then recognized at the point-in-time in which control of the distinct good or service is transferred to the customer, typically based upon the terms of delivery. Revenue recognized at a point-in-time for the year ended December 31, 2019 accounted for approximately 51% of total net sales.

Timing of revenue recognition and cash collection may result in billed receivables, unbilled receivables (contract assets), and deferred revenue (contract liabilities) on the Consolidated Balance Sheet. Contract assets primarily relate to our right to consideration for work completed but not billed as of the reporting date. Contract assets are transferred to billed receivables when the rights to consideration become unconditional. Contract liabilities primarily consist of customer advances received prior to revenue being earned. Contract assets and contract liabilities are reported in the "Receivables, net" and "Deferred revenue" lines, respectively, within the Consolidated Balance Sheet.

As we adopted ASC 606 using a modified retrospective method, our Consolidated Financial Statements for the year ended December 31, 2017 were not retrospectively adjusted. For the year ended December 31, 2017, revenue was recognized when the earnings process was considered substantially complete with all of the following criteria met: 1) persuasive evidence of an arrangement existed; 2) delivery occurred or services were rendered; 3) our price to the customer was fixed or determinable; and 4) collectability was reasonably assured. We determined the appropriate revenue recognition method by analyzing the terms and conditions of each contract. Revenue was recognized on product sales as production units were shipped and title and risk of loss was transferred. Revenue was recognized on service-type contracts as services were rendered. The significant estimates made in recognizing revenue were primarily for long-term contracts, which were generally accounted for using the cost-to-cost method of percentage of completion accounting. Under the cost-to-cost method, profits were recorded pro-rata, based upon estimates of direct and indirect costs to complete such contracts. Any changes in estimates of contract sales, costs, or profits were recognized using the cumulative catch-up method of accounting.

Inventory

Inventory costs include materials, direct labor, purchasing, and manufacturing overhead costs, which are stated at the lower of cost or net realizable value. We estimate the net realizable value of our inventories and establish reserves to reduce the carrying amount of these inventories to net realizable value, as necessary. We continually evaluate the adequacy of the inventory reserves by reviewing historical scrap rates, on-hand quantities as compared with historical and projected usage levels, and other anticipated contractual requirements. We generally hold reserved inventory for extended periods before scrapping and disposing of the reserved inventory, which contributes to a higher level of reserved inventory relative to the level of annual inventory write-offs.

We purchase materials for the manufacture of components for sale. The decision to purchase a set quantity of a particular item is influenced by several factors including: current and projected price, future estimated availability, existing and projected contracts to produce certain items, and the estimated needs for our businesses.

Pension and Other Postretirement Benefits

In consultation with our actuaries, we determine the appropriate assumptions for use in determining the liability for future pension and other postretirement benefits. The most significant of these assumptions include the discount rates used to determine plan obligations, the expected return on plan assets, and the number of employees who will receive benefits, their tenure, their salary levels, and their projected mortality. Changes in these assumptions, if significant in future years, may have an effect on our pension and postretirement expense, associated pension and postretirement assets and liabilities, and our annual cash requirements to fund these plans.

The discount rate used to determine the plan benefit obligations as of December 31, 2019, and the annual periodic costs for 2020, was decreased from 4.28% to 3.22% for the Curtiss-Wright Pension Plan, and from 4.19% to 3.10% for the nonqualified benefit plan, to reflect current economic conditions. The rates reflect the hypothetical rates at which the projected benefit obligations could be effectively settled or paid out to participants on that date. We determine our discount rates for past service liabilities and service cost utilizing a select bond yield curve developed by our actuaries, by using the rates of return on high-quality, fixed-income corporate bonds available at the measurement date with maturities that match the plan's expected cash outflows for benefit payments. Interest cost is determined by applying the spot rate from the full yield curve to each anticipated benefit payment. The discount rate changes contributed to an increase in the benefit obligation of \$110 million in the CW plans.

The rate of compensation increase for base pay in the pension plans was unchanged at a weighted average of 3.5% based upon a graded scale of 4.9% to 2.9% that decrements as pay increases, which reflects the experience over past years and the Company's expectation of future salary increases. We also updated our mortality assumptions to utilize the Pri-2012 tables published by the Society of Actuaries in October 2019, and updated the projected mortality scale to MP-2019, which reflects a slower rate of future mortality improvements than the previous MP-2018 table utilized. These changes contributed to a decrease in the benefit obligation of \$3 million in all U.S. plans.

The overall expected return on assets assumption is based primarily on the expectations of future performance. Expected future performance is determined by weighting the expected returns for each asset class by the plan's asset allocation. The expected returns are based on long-term capital market assumptions provided by our investment consultants. Based on a review of market trends, actual returns on plan assets, and other factors, the Company's expected long-term rate of return on plan assets was reduced to 7.50% as of December 31, 2019, which will be utilized for determining 2020 pension cost. An expected long-term rate of return of 8.00% was used for determining 2019, 2018 and 2017 pension expense.

The timing and amount of future pension income or expense to be recognized each year is dependent on the demographics and expected compensation of the plan participants, the expected interest rates in effect in future years, inflation, and the actual and expected investment returns of the assets in the pension trust.

The funded status of the Curtiss-Wright Pension Plan decreased by \$24 million in 2019, primarily driven by a decrease in market interest rates as of December 31, 2019. This was partially offset by favorable asset experience due to strong market performance in 2019.

The following table reflects the impact of changes in selected assumptions used to determine the funded status of the Company's U.S. qualified and nonqualified pension plans as of December 31, 2019 (in thousands, except for percentage point change):

Assumption	Percentage Point Change	Increase in Benefit Obligation	Increase in Expense
Discount rate	(0.25) %	\$25,800	\$2,600
Rate of compensation increase	0.25 %	\$2,500	\$500
Expected return on assets	(0.25) %	—	\$2,100

See Note 16 to the Consolidated Financial Statements for further information on our pension and postretirement plans.

Goodwill

We have \$1.2 billion in goodwill as of December 31, 2019. Generally, the largest separately identifiable asset from the businesses that we acquire is the value of their assembled workforces, which includes the additional benefit received from management, administrative, marketing, business development, engineering, and technical employees of the acquired businesses. The success of our acquisitions, including the ability to retain existing business and to successfully compete for and win new business, is based on the additional benefit received from management, administrative, marketing, and business development, scientific, engineering, and technical skills and knowledge of our employees rather than on productive capital (plant and equipment, technology, and intellectual property). Therefore, since intangible assets for assembled workforces are part of goodwill, the substantial majority of the intangible assets for our acquired business acquisitions are recognized as goodwill.

We test for goodwill impairment annually, at the reporting unit level, in the fourth quarter, which coincides with the preparation of our strategic operating plan. Additionally, goodwill is tested for impairment when an event occurs or if circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount.

We perform either a quantitative or qualitative assessment to assess if the fair value of the respective reporting unit exceeds its carrying value. The qualitative goodwill impairment assessment requires evaluating factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. As part of our goodwill qualitative assessment process for each reporting unit, when utilized, we evaluate various factors that are specific to the reporting unit as well as industry and macroeconomic factors in order to determine whether it is reasonably likely to have a material impact on the fair value of our reporting units. Examples of the factors that are considered include the results of the most recent impairment test, current and long-range forecasts, and changes in the strategic outlook or organizational structure of the

reporting units. The long-range financial forecasts of the reporting units are compared to the forecasts used in the prior year analysis to determine if management expectations for the business have changed.

Actual results may differ from those estimates. When performing the quantitative assessment to calculate the fair value of a reporting unit, we consider both comparative market multiples as well as estimated discounted cash flows for the reporting unit. The significant estimates and assumptions include, but are not limited to, revenue growth rates, operating margins, and future economic and market conditions. The discount rates are based upon the reporting unit's weighted average cost of capital. As a supplement, we conduct additional sensitivity analysis to assess the risk for potential impairment based upon changes in the key assumptions such as the discount rate, expected long-term growth rate, and cash flow projections. Based upon the completion of our annual test, which included qualitative assessments, we determined that there was no impairment of goodwill and that all reporting units' estimated fair values were substantially in excess of their carrying amounts.

Other Intangible Assets

Other intangible assets are generally the result of acquisitions and consist primarily of purchased technology, customer related intangibles, and trademarks. Intangible assets are recorded at their fair values as determined through purchase accounting, based on estimates and judgments regarding expectations for the estimated future after-tax earnings and cash flows arising from follow-on sales. Definite-lived intangible assets are amortized on a straight-line basis over their estimated useful lives, which generally range from 1 to 20 years. Customer-related intangibles primarily consist of customer relationships, which reflect the value of the benefit derived from the incremental revenue and related cash flows as a direct result of the customer relationship. We review the recoverability of all intangible assets, including the related useful lives, whenever events or changes in circumstances indicate that the carrying amount might not be recoverable. We would record any impairment in the reporting period in which it has been identified.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk.

We are exposed to certain market risks from changes in interest rates and foreign currency exchange rates as a result of our global operating and financing activities. We seek to minimize any material risks from foreign currency exchange rate fluctuations through our normal operating and financing activities and, when deemed appropriate, through the use of derivative financial instruments. We used forward foreign currency contracts to manage our currency rate exposures during the year ended December 31, 2019, and, in order to manage our interest rate risk, we may, from time to time, enter into interest rate swaps to balance the ratio of fixed to floating rate debt. We do not use such instruments for trading or other speculative purposes. Information regarding our accounting policy on financial instruments is contained in Note 1 to the Consolidated Financial Statements.

Interest Rates

The market risk for a change in interest rates relates primarily to our debt obligations. Our fixed rate interest exposure was 100% as of December 31, 2019 and December 31, 2018. As of December 31, 2019, a change in interest rates of 1% would not have a material impact on consolidated interest expense. Information regarding our Senior Notes and Revolving Credit Agreement is contained in Note 13 to the Consolidated Financial Statements.

Foreign Currency Exchange Rates

Although the majority of our business is transacted in U.S. dollars, we do have market risk exposure to changes in foreign currency exchange rates, primarily as it relates to the value of the U.S. dollar versus the British Pound, Canadian dollar, and Euro. Any significant change against the U.S. dollar in the value of the currencies of those countries in which we do business could have an effect on our business, financial condition, and results of operations. If foreign exchange rates were to collectively weaken or strengthen against the U.S. dollar by 10%, net earnings would have decreased or increased, respectively, by approximately \$6 million as it relates exclusively to foreign currency exchange rate exposures.

Financial instruments expose us to counter-party credit risk for non-performance and to market risk for changes in interest and foreign currency rates. We manage exposure to counter-party credit risk through specific minimum credit standards, diversification of counter-parties, and procedures to monitor concentrations of credit risk. We monitor the impact of market risk on the fair value and cash flows of our investments by investing primarily in investment grade interest-bearing securities, which have short-term maturities. We attempt to minimize possible changes in interest and currency exchange rates to amounts that are not material to our consolidated results of operations and cash flows.

Item 8. Financial Statements and Supplementary Data.

CONSOLIDATED STATEMENTS OF EARNINGS

	For the years ended December 31,		
	2019	2018	2017
<i>(In thousands, except per share data)</i>			
Net sales			
Product sales	\$ 2,073,530	\$ 1,993,249	\$ 1,854,216
Service sales	414,431	418,586	416,810
Total net sales	<u>2,487,961</u>	<u>2,411,835</u>	<u>2,271,026</u>
Cost of sales			
Cost of product sales	1,329,761	1,272,599	1,198,881
Cost of service sales	259,455	267,975	271,360
Total cost of sales	<u>1,589,216</u>	<u>1,540,574</u>	<u>1,470,241</u>
Gross profit	898,745	871,261	800,785
Research and development expenses	72,520	64,525	61,393
Selling expenses	120,861	126,641	121,873
General and administrative expenses	301,411	306,469	292,399
Operating income	<u>403,953</u>	<u>373,626</u>	<u>325,120</u>
Interest expense	31,347	33,983	41,471
Other income, net	23,856	16,596	15,970
Earnings before income taxes	396,462	356,239	299,619
Provision for income taxes	(88,879)	(80,490)	(84,728)
Net earnings	<u>\$ 307,583</u>	<u>\$ 275,749</u>	<u>\$ 214,891</u>
Basic earnings per share	\$ 7.20	\$ 6.28	\$ 4.86
Diluted earnings per share:	\$ 7.15	\$ 6.22	\$ 4.80
Dividends per share	\$ 0.66	\$ 0.60	\$ 0.56
Weighted average shares outstanding:			
Basic	42,739	43,892	44,182
Diluted	43,016	44,316	44,761

See notes to consolidated financial statements

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

<i>(In thousands)</i>	For the years ended December 31,		
	2019	2018	2017
Net earnings	\$ 307,583	\$ 275,749	\$ 214,891
Other comprehensive income			
Foreign currency translation, net of tax ⁽¹⁾	18,447	(52,440)	77,942
Pension and postretirement adjustments, net of tax ⁽²⁾	(29,017)	(19,167)	(3,026)
Other comprehensive income (loss), net of tax	(10,570)	(71,607)	74,916
Comprehensive income	\$ 297,013	\$ 204,142	\$ 289,807

⁽¹⁾ The tax benefit (expense) included in other comprehensive income for foreign currency translation adjustments for 2019, 2018, and 2017 were (\$0.1) million, \$0.8 million, and (\$1.9) million, respectively.

⁽²⁾ The tax benefit included in other comprehensive income for pension and postretirement adjustments for 2019, 2018, and 2017 were \$8.5 million, \$7.0 million, and \$2.8 million, respectively.

See notes to consolidated financial statements

CONSOLIDATED BALANCE SHEETS

<i>(In thousands, except share data)</i>	As of December 31,	
	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 391,033	\$ 276,066
Receivables, net	632,194	593,755
Inventories, net	424,835	423,426
Other current assets	81,729	50,719
Total current assets	1,529,791	1,343,966
Property, plant, and equipment, net	385,593	374,660
Goodwill	1,166,680	1,088,032
Other intangible assets, net	479,907	429,567
Operating lease right-of-use assets, net	165,490	—
Other assets	36,800	19,160
Total assets	\$ 3,764,261	\$ 3,255,385
LIABILITIES		
Current liabilities:		
Current portion of long-term and short-term debt	\$ —	\$ 243
Accounts payable	222,000	232,983
Accrued expenses	164,744	166,954
Income taxes payable	7,670	5,811
Deferred revenue	276,115	236,508
Other current liabilities	74,202	44,829
Total current liabilities	744,731	687,328
Long-term debt	760,639	762,313
Deferred tax liabilities	80,159	47,121
Accrued pension and other postretirement benefit costs	138,635	101,227
Long-term operating lease liability	145,124	—
Long-term portion of environmental reserves	15,026	15,777
Other liabilities	105,575	110,838
Total liabilities	1,989,889	1,724,604
Contingencies and Commitments (Notes 9, 13, and 18)		
STOCKHOLDERS' EQUITY		
Common stock, \$1 par value, 100,000,000 shares authorized as of December 31, 2019 and December 31, 2018; 49,187,378 shares issued as of December 31, 2019 and December 31, 2018; outstanding shares were 42,680,215 as of December 31, 2019 and 42,772,417 as of December 31, 2018	49,187	49,187
Additional paid in capital	116,070	118,234
Retained earnings	2,497,111	2,191,471
Accumulated other comprehensive loss	(325,274)	(288,447)
Common treasury stock, at cost (6,507,163 shares as of December 31, 2019 and 6,414,961 shares as of December 31, 2018)	(562,722)	(539,664)
Total stockholders' equity	1,774,372	1,530,781
Total liabilities and stockholders' equity	\$ 3,764,261	\$ 3,255,385

See notes to consolidated financial statements

CONSOLIDATED STATEMENTS OF CASH FLOWS

For the years ended December 31,

(In thousands)

	2019	2018	2017
Cash flows from operating activities:			
Net earnings	\$ 307,583	\$ 275,749	\$ 214,891
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation and amortization	102,412	102,949	99,995
(Gain) loss on sale of businesses	—	(1,735)	(875)
(Gain) loss on sale/disposal of long-lived assets	(11,054)	(1,120)	29
Deferred income taxes	40,787	8,562	(5,782)
Share-based compensation	13,669	14,094	11,572
Changes in operating assets and liabilities, net of businesses acquired and disposed of:			
Receivables, net	(12,613)	(57,492)	(16,388)
Inventories, net	(3,485)	(41,197)	19,711
Progress payments	(4,834)	(11,121)	(774)
Accounts payable and accrued expenses	(18,629)	48,930	4,323
Deferred revenue	36,134	23,082	36,898
Income taxes	(15,625)	(8,847)	(5,479)
Pension and postretirement, net	(1,310)	(43,759)	3,481
Other	(11,631)	28,178	27,110
Net cash provided by operating activities	421,404	336,273	388,712
Cash flows from investing activities:			
Proceeds from sales and disposals of long-lived assets	15,093	9,117	6,769
Additions to property, plant, and equipment	(69,752)	(53,417)	(52,705)
Acquisition of businesses, net of cash acquired	(185,209)	(210,167)	(232,630)
Other	(172)	(1,049)	6,238
Net cash used for investing activities	(240,040)	(255,516)	(272,328)
Cash flows from financing activities:			
Borrowings under revolving credit facilities	37,692	372,980	7,658
Payment of revolving credit facilities	(37,934)	(372,887)	(8,176)
Principal payments on debt	—	(50,000)	(150,000)
Repurchases of company stock	(50,661)	(198,592)	(52,127)
Proceeds from share-based compensation plans	11,770	11,940	14,179
Dividends paid	(28,200)	(26,328)	(24,740)
Other	(812)	(752)	(692)
Net cash used for financing activities	(68,145)	(263,639)	(213,898)
Effect of exchange-rate changes on cash	1,748	(16,172)	18,786
Net increase (decrease) in cash and cash equivalents	114,967	(199,054)	(78,728)
Cash and cash equivalents at beginning of year	276,066	475,120	553,848
Cash and cash equivalents at end of year	\$ 391,033	\$ 276,066	\$ 475,120
Supplemental disclosure of non-cash activities:			
Capital expenditures incurred but not yet paid	2,015	2,193	976

See notes to consolidated financial statements

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands)

	Common Stock	Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock
January 1, 2017	\$ 49,187	\$ 129,483	\$ 1,754,907	\$ (291,756)	\$ (350,630)
Net earnings	—	—	214,891	—	—
Other comprehensive income, net of tax	—	—	—	74,916	—
Dividends paid	—	—	(24,740)	—	—
Restricted stock	—	(12,104)	—	—	12,105
Stock options exercised	—	(5,724)	—	—	19,902
Other	—	(2,237)	(734)	—	889
Share-based compensation	—	11,191	—	—	381
Repurchase of common stock	—	—	—	—	(52,127)
December 31, 2017	\$ 49,187	\$ 120,609	\$ 1,944,324	\$ (216,840)	\$ (369,480)
Cumulative effect from adoption of ASC 606	—	—	(2,274)	—	—
Net earnings	—	—	275,749	—	—
Other comprehensive loss, net of tax	—	—	—	(71,607)	—
Dividends paid	—	—	(26,328)	—	—
Restricted stock	—	(13,134)	—	—	13,134
Stock options exercised	—	(2,355)	—	—	14,294
Other	—	(752)	—	—	752
Share-based compensation	—	13,866	—	—	228
Repurchase of common stock	—	—	—	—	(198,592)
December 31, 2018	\$ 49,187	\$ 118,234	\$ 2,191,471	\$ (288,447)	\$ (539,664)
Cumulative effect from adoption of ASU 2018-02	—	—	26,257	(26,257)	—
Net earnings	—	—	307,583	—	—
Other comprehensive loss, net of tax	—	—	—	(10,570)	—
Dividends paid	—	—	(28,200)	—	—
Restricted stock	—	(10,483)	—	—	10,483
Stock options exercised	—	(4,226)	—	—	15,996
Other	—	(719)	—	—	719
Share-based compensation	—	13,264	—	—	405
Repurchase of common stock	—	—	—	—	(50,661)
December 31, 2019	\$ 49,187	\$ 116,070	\$ 2,497,111	\$ (325,274)	\$ (562,722)

See notes to consolidated financial statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Operations

Curtiss-Wright Corporation and its subsidiaries (the Corporation or the Company) is a global, diversified manufacturing and service company that designs, manufactures, and overhauls precision components and provides highly engineered products and services to the aerospace, defense, general industrial, and power generation markets.

Principles of Consolidation

The consolidated financial statements include the accounts of the Corporation and its majority-owned subsidiaries. All intercompany transactions and accounts have been eliminated.

Use of Estimates

The financial statements of the Corporation have been prepared in conformity with accounting principles generally accepted in the United States of America (U.S. GAAP), which requires management to make estimates and judgments that affect the reported amount of assets, liabilities, revenue, and expenses and disclosure of contingent assets and liabilities in the accompanying financial statements. The most significant of these estimates includes the estimate of costs to complete long-term contracts, the estimate of useful lives for property, plant, and equipment, cash flow estimates used for testing the recoverability of assets, pension plan and postretirement obligation assumptions, estimates for inventory obsolescence, estimates for the valuation and useful lives of intangible assets and legal reserves. Actual results may differ from these estimates.

Cash and Cash Equivalents

Cash equivalents consist of money market funds and commercial paper that are readily convertible into cash, all with original maturity dates of three months or less.

Inventory

Inventories are stated at lower of cost or net realizable value. Production costs are comprised of direct material and labor and applicable manufacturing overhead.

Progress Payments

Certain long-term contracts provide for interim billings as costs are incurred on the respective contracts. Pursuant to contract provisions, agencies of the U.S. Government and other customers obtain control of promised goods or services to the extent that progress payments are received. Accordingly, these receipts have been reported as a reduction of unbilled receivables as presented in Note 4 to the Consolidated Financial Statements. In the event that progress payments received exceed revenue recognized to date on a specific contract, a contract liability has been established with such amount reported in the "Deferred revenue" line within the Consolidated Balance Sheet.

The Corporation also receives progress payments on development contracts related to certain aerospace and defense programs. Progress payments received on partially funded development contracts have been reported as a reduction of inventories, as presented in Note 5 to the Consolidated Financial Statements.

Property, Plant, and Equipment

Property, plant, and equipment are carried at cost less accumulated depreciation. Major renewals and betterments are capitalized, while maintenance and repairs that do not improve or extend the life of the asset are expensed in the period that they are incurred. Depreciation is computed using the straight-line method over the estimated useful lives of the respective assets.

Average useful lives for property, plant, and equipment are as follows:

Buildings and improvements	5 to 40 years
Machinery, equipment, and other	3 to 15 years

See Note 6 to the Consolidated Financial Statements for further information on property, plant, and equipment.

Intangible Assets

Intangible assets are generally the result of acquisitions and consist primarily of purchased technology, customer related intangibles, trademarks, and technology licenses. Intangible assets are amortized on a straight-line basis over their estimated useful lives, which range from 1 to 20 years. See Note 8 to the Consolidated Financial Statements for further information on other intangible assets.

Impairment of Long-Lived Assets

The Corporation reviews the recoverability of all long-lived assets, including the related useful lives, whenever events or changes in circumstances indicate that the carrying amount of a long-lived asset might not be recoverable. If required, the Corporation compares the estimated fair value determined by either the undiscounted future net cash flows or appraised value to the related asset's carrying value to determine whether there has been an impairment. If an asset is considered impaired, the asset is written down to fair value in the period in which the impairment becomes known. The Corporation recognized no significant impairment charges on assets held in use during the years ended December 31, 2019, 2018, and 2017.

Goodwill

Goodwill results from business acquisitions. The Corporation accounts for business acquisitions by allocating the purchase price to the tangible and intangible assets acquired and liabilities assumed. Assets acquired and liabilities assumed are recorded at their fair values, and the excess of the purchase price over the amounts allocated is recorded as goodwill. The recoverability of goodwill is subject to an annual impairment test or whenever an event occurs or circumstances change that would more likely than not result in an impairment. The impairment test is based on the estimated fair value of the underlying businesses. The Corporation's goodwill impairment test is performed annually in the fourth quarter of each year. See Note 7 to the Consolidated Financial Statements for further information on goodwill.

Fair Value of Financial Instruments

Accounting guidance requires certain disclosures regarding the fair value of financial instruments. Due to the short maturities of cash and cash equivalents, accounts receivable, accounts payable, and accrued expenses, the net book value of these financial instruments is deemed to approximate fair value. See Notes 10 and 13 to the Consolidated Financial Statements for further information on the Corporation's financial instruments.

Research and Development

The Corporation funds research and development programs for commercial products and independent research and development and bid and proposal work related to government contracts. Development costs include engineering for new customer requirements. Corporation-sponsored research and development costs are expensed as incurred.

Research and development costs associated with customer-sponsored programs are capitalized to inventory and are recorded in cost of sales when products are delivered or services performed. Funds received under shared development contracts are a reduction of the total development expenditures under the shared contract and are shown net as research and development costs.

Accounting for Share-Based Payments

The Corporation follows the fair value based method of accounting for share-based employee compensation, which requires the Corporation to expense all share-based employee compensation. Share-based employee compensation is a non-cash expense since the Corporation settles these obligations by issuing the shares of Curtiss-Wright Corporation instead of settling such obligations with cash payments.

Compensation expense for non-qualified share options, performance shares, and time-based restricted stock is recognized over the requisite service period for the entire award based on the grant date fair value.

Income Taxes

The Corporation accounts for income taxes using the asset and liability method. Under the asset and liability method, deferred tax assets and liabilities are recognized for future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The effect on deferred tax assets and liabilities of a change in tax laws is recognized in the results of operations in the period the new laws are enacted. A valuation allowance is recorded to reduce the carrying amounts of deferred tax assets unless it is more likely than not that such assets will be realized.

The Corporation records amounts related to uncertain income tax positions by 1) prescribing a minimum recognition threshold a tax position is required to meet before being recognized in the financial statements and 2) the measurement of the income tax benefits recognized from such positions. The Corporation's accounting policy is to classify uncertain income tax positions that are not expected to be resolved in one year as a non-current income tax liability and to classify interest and penalties as a component of interest expense and general and administrative expenses, respectively. See Note 12 to the Consolidated Financial Statements for further information.

Foreign Currency

For operations outside the United States of America that prepare financial statements in currencies other than the U.S. dollar, the Corporation translates assets and liabilities at period-end exchange rates and income statement amounts using weighted-average exchange rates for the period. The cumulative effect of translation adjustments is presented as a component of accumulated other comprehensive income (loss) within stockholders' equity. This balance is primarily affected by foreign currency exchange rate fluctuations. (Gains) and losses from foreign currency transactions are included in General and administrative expenses in the Consolidated Statement of Earnings, which amounted to \$7.2 million, \$(4.5) million, and \$5.4 million for the years ended December 31, 2019, 2018, and 2017, respectively.

Derivatives

Forward Foreign Exchange and Currency Option Contracts

The Corporation uses financial instruments, such as forward exchange and currency option contracts, to hedge a portion of existing and anticipated foreign currency denominated transactions. The purpose of the Corporation's foreign currency risk management program is to reduce volatility in earnings caused by exchange rate fluctuations. All of the derivative financial instruments are recorded at fair value based upon quoted market prices for comparable instruments, with the gain or loss on these transactions recorded into earnings in the period in which they occur. These (gains) and losses are classified as General and administrative expenses in the Consolidated Statement of Earnings and amounted to (\$2.1) million, \$6.6 million, and (\$0.3) million for the years ended December 31, 2019, 2018, and 2017, respectively. The Corporation does not use derivative financial instruments for trading or speculative purposes.

Interest Rate Risks and Related Strategies

The Corporation's primary interest rate exposure results from changes in U.S. dollar interest rates. The Corporation's policy is to manage interest cost using a mix of fixed and variable rate debt. The Corporation periodically uses interest rate swaps to manage such exposures. Under these interest rate swaps, the Corporation exchanges, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount.

For interest rate swaps designated as fair value hedges (i.e., hedges against the exposure to changes in the fair value of an asset or a liability or an identified portion thereof that is attributable to a particular risk), changes in the fair value of the interest rate swaps offset changes in the fair value of the fixed rate debt due to changes in market interest rates.

Recently Issued Accounting Standards

Recent accounting standards adopted

ASU 2016-02 - Leases - On January 1, 2019, the Corporation adopted ASC 842, *Leases*, using the optional transition method of adoption which permits the entity to continue presenting all periods prior to January 1, 2019 under previous lease accounting guidance. In conjunction with the adoption, the Corporation elected the package of practical expedients which permits the entity to forgo reassessment of conclusions reached regarding lease existence and lease classification under previous guidance, as well as the practical expedient to not separate non-lease components. Further, the Corporation made an accounting policy election to

account for short-term leases in a manner consistent with the methodology applied under previous guidance. The adoption of this standard resulted in an increase of approximately \$151 million in both total assets and total liabilities in the Corporation's Consolidated Balance Sheet as of January 1, 2019.

ASU 2018-02 - Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income - On January 1, 2019, the Corporation adopted ASU 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which permits the reclassification of tax effects stranded in accumulated other comprehensive income to retained earnings as a result of the 2017 Tax Cuts and Jobs Act (the Tax Act). The adoption of this standard resulted in a reclassification of \$26 million from accumulated other comprehensive loss to retained earnings in the Corporation's Consolidated Balance Sheet as of January 1, 2019.

ASU 2018-14 - Changes to the Disclosure Requirements for Defined Benefit Plans - In August 2018, the FASB issued ASU 2018-14, *Compensation - Retirement Benefits - Defined Benefit Plans - General (Subtopic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans*. Specifically, the amendment removes disclosure requirements for amounts classified in accumulated other comprehensive income expected to be recognized over the next year and the effects of a one-percentage-point change in the assumed health care cost trend rate on service cost, interest cost, and the benefit obligation for postretirement benefits. The amendment also requires additional disclosure around weighted-average interest crediting rates for cash balance plans, a narrative description of the reasons for significant gains and losses, and an explanation of any other significant changes in the benefit obligation or plan assets. The Corporation early adopted this standard as of December 31, 2019 and included revised disclosures within Note 16 of the Consolidated Financial Statements.

Recent accounting standards to be adopted

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments*. This ASU adds a current expected credit loss impairment model to U.S. GAAP that is based on expected losses rather than incurred losses whereby a broader range of reasonable and supportable information is required to be utilized in order to derive credit loss estimates. The Corporation plans to adopt the ASU as of January 1, 2020 as the standard is effective for fiscal years beginning after December 15, 2019. The Corporation is currently evaluating the impact of adopting this standard, but does not expect the adoption to have a material impact on its Consolidated Financial Statements.

2. REVENUE

The Corporation accounts for revenues in accordance with ASC 606, *Revenue from Contracts with Customers*, which was adopted as of January 1, 2018 on a modified retrospective basis. Under ASC 606, revenue is recognized when control of a promised good and/or service is transferred to a customer at a transaction price that reflects the consideration that the Corporation expects to be entitled to in exchange for that good and/or service.

Performance Obligations

The Corporation identifies a performance obligation for each promise in a contract to transfer a distinct good or service to the customer. As part of its assessment, the Corporation considers all goods and/or services promised in the contract, regardless of whether they are explicitly stated or implied by customary business practices. The Corporation's contracts may contain either a single performance obligation, including the promise to transfer individual goods or services that are not separately distinct within the context of the respective contracts, or multiple performance obligations. For contracts with multiple performance obligations, the Corporation allocates the overall transaction price to each performance obligation using standalone selling prices, where available, or utilizes estimates for each distinct good or service in the contract where standalone prices are not available. In certain instances, the transaction price may include estimated amounts of variable consideration including but not limited to incentives, awards, price escalations, liquidated damages, and penalties, only to the extent that it is probable that a significant reversal of cumulative revenue recognized to date around such variable consideration will not occur. The Corporation estimates variable consideration to be included in the transaction price using either the expected value method or most likely amount method, contingent upon the facts and circumstances of the specific arrangement. Variable consideration associated with the Corporation's respective arrangements is not typically constrained.

The Corporation's performance obligations are satisfied either at a point-in-time or on an over-time basis. Revenue recognized on an over-time basis for the year ended December 31, 2019 and 2018 accounted for approximately 49% and 46%, respectively, of total net sales. Typically, over-time revenue recognition is based on the utilization of an input measure used to measure progress, such as costs incurred to date relative to total estimated costs. Changes in total estimated costs are recognized using the cumulative catch-up method of accounting which recognizes the cumulative effect of the changes on current and prior periods in the current period. Accordingly, the effect of the changes on future periods of contract performance is recognized as

if the revised estimate had been the original estimate. A significant change in an estimate on one or more contracts could have a material effect on the Corporation's consolidated financial position, results or operations, or cash flows. However, there were no significant changes in estimated contract costs during 2019, 2018, or 2017.

If a performance obligation does not qualify for over-time revenue recognition, revenue is then recognized at the point-in-time in which control of the distinct good or service is transferred to the customer, typically based upon the terms of delivery. Revenue recognized at a point-in-time for the year ended December 31, 2019 and 2018 accounted for approximately 51% and 54%, respectively, of total net sales.

Contract backlog represents the remaining performance obligations that have not yet been recognized as revenue. Backlog includes deferred revenue and amounts that will be invoiced and recognized as revenue in future periods. Total backlog was approximately \$2.2 billion as of December 31, 2019, of which the Corporation expects to recognize approximately 92% as net sales over the next 12-36 months. The remainder will be recognized thereafter.

Disaggregation of Revenue

The following table presents the Corporation's total net sales disaggregated by end market and customer type:

Total Net Sales by End Market and Customer Type <i>(In thousands)</i>	Year Ended December 31,		
	2019	2018	2017
Defense			
Aerospace	\$ 416,841	\$ 376,951	\$ 372,678
Ground	93,432	97,131	96,042
Naval	568,776	486,476	408,221
Total Defense Customers	\$ 1,079,049	\$ 960,558	\$ 876,941
Commercial			
Aerospace	\$ 433,038	\$ 414,422	\$ 409,384
Power Generation	392,173	431,793	423,747
General Industrial	583,701	605,062	560,954
Total Commercial Customers	\$ 1,408,912	\$ 1,451,277	\$ 1,394,085
Total	\$ 2,487,961	\$ 2,411,835	\$ 2,271,026

Contract Balances

Timing of revenue recognition and cash collection may result in billed receivables, unbilled receivables (contract assets), and deferred revenue (contract liabilities) on the Consolidated Balance Sheet. The Corporation's contract assets primarily relate to its rights to consideration for work completed but not billed as of the reporting date. Contract assets are transferred to billed receivables when the rights to consideration become unconditional. This is typical in situations where amounts are billed as work progresses in accordance with agreed-upon contractual terms or upon achievement of contractual milestones. The Corporation's contract liabilities primarily consist of customer advances received prior to revenue being earned. Revenues recognized for the years ended December 31, 2019 and 2018 included in the contract liabilities balance at the beginning of the respective years were approximately \$198 million and \$164 million, respectively. Changes in contract assets and contract liabilities as of December 31, 2019 were not materially impacted by any other factors. Contract assets and contract liabilities are reported in the "Receivables, net" and "Deferred revenue" lines, respectively, within the Consolidated Balance Sheet.

Pre-adoption of ASC 606

As the Corporation adopted ASC 606 using the modified retrospective method, the Consolidated Financial Statements for the year ended December 31, 2017 were not retrospectively adjusted. For the year ended December 31, 2017, revenue was recognized when the earnings process was considered substantially complete with all of the following criteria met: 1) persuasive evidence of an arrangement existed; 2) delivery occurred or services were rendered; 3) the Corporation's price to its customer was fixed or determinable; and 4) collectability was reasonably assured. The Corporation determined the appropriate revenue recognition method by analyzing the terms and conditions of each contract. Revenue was recognized on product sales

as production units were shipped and title and risk of loss was transferred. Revenue was recognized on service-type contracts as services were rendered. The significant estimates made in recognizing revenue were primarily for long-term contracts, which were generally accounted for using the cost-to-cost method of percentage of completion accounting. Under the cost-to-cost method, profits were recorded pro-rata, based upon estimates of direct and indirect costs to complete such contracts. Any changes in estimates of contract sales, costs, or profits were recognized using the cumulative catch-up method of accounting.

3. ACQUISITIONS

The Corporation continually evaluates potential acquisitions that either strategically fit within the Corporation's existing portfolio or expand the Corporation's portfolio into new product lines or adjacent markets. The Corporation has completed a number of acquisitions that have been accounted for as business combinations and have resulted in the recognition of goodwill in the Corporation's financial statements. This goodwill arises because the purchase prices for these businesses reflect the future earnings and cash flow potential in excess of the earnings and cash flows attributable to the current product and customer set at the time of acquisition. Thus, goodwill inherently includes the know-how of the assembled workforce, the ability of the workforce to further improve the technology and product offerings, and the expected cash flows resulting from these efforts. Goodwill may also include expected synergies resulting from the complementary strategic fit these businesses bring to existing operations.

The Corporation allocates the purchase price at the date of acquisition based upon its understanding of the fair value of the acquired assets and assumed liabilities. Only items identified as of the acquisition date are considered for subsequent adjustment. The Corporation will make appropriate adjustments to the purchase price allocation prior to completion of the measurement period, as required.

During the twelve months ended December 31, 2019, the Corporation acquired two businesses for an aggregate purchase price of \$185 million, net of cash acquired. During the twelve months ended December 31, 2018, the Corporation acquired one business for an aggregate purchase price of \$210 million, net of cash acquired. These acquisitions are described in more detail below.

For the year ended December 31, 2019 and 2018, included within the Consolidated Statement of Earnings, the Corporation's acquisitions contributed \$11 million and \$64 million of total net sales, respectively, and immaterial net earnings in both periods.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed at the date of acquisition for all acquisitions consummated during 2019 and 2018:

<i>(In thousands)</i>	2019	2018
Accounts receivable	\$ 16,551	\$ 24,385
Inventory	7,608	31,875
Property, plant, and equipment	1,117	3,206
Intangible assets	94,400	146,100
Operating lease right-of-use assets, net	4,605	—
Other current and non-current assets	888	47
Current and non-current liabilities	(11,604)	(5,374)
Net tangible and intangible assets	113,565	200,239
Purchase price	185,209	210,167
Goodwill	\$ 71,644	\$ 9,928
Goodwill deductible for tax purposes	\$ 72,777	\$ 9,928

2019 Acquisitions

901D Holdings, LLC (901D)

On December 31, 2019, the Corporation acquired 100% of the membership interests of 901D for \$135.1 million, net of cash acquired. The Purchase Agreement contains a purchase price adjustment mechanism and representations and warranties customary for a transaction of this type, including a portion of the purchase price deposited in escrow as security for potential indemnification claims against the seller. 901D is a designer and manufacturer of mission-critical integrated electronic systems,

subsystems, and ruggedized shipboard enclosure solutions supporting every major U.S. Navy shipbuilding program. The acquired business will operate within the Defense segment. The acquisition is subject to post-closing adjustments with the purchase price allocation not yet complete.

Tactical Communications Group (TCG)

On March 15, 2019, the Corporation acquired 100% of the membership interests of TCG for \$50.1 million, net of cash acquired. The Purchase Agreement contains a purchase price adjustment mechanism and representations and warranties customary for a transaction of this type, including a portion of the purchase price deposited in escrow as security for potential indemnification claims against the seller. TCG is a designer and manufacturer of tactical data link software solutions for critical military communications systems. The acquired business operates within the Defense segment.

2018 Acquisitions

Dresser-Rand Government Business (DRG)

On April 2, 2018, the Corporation acquired certain assets and assumed certain liabilities of DRG for \$210.2 million in cash. The Asset Purchase Agreement contains a purchase price adjustment mechanism and representations and warranties customary for a transaction of this type. DRG is a designer and manufacturer of mission-critical, high-speed rotating equipment solutions and also acts as the sole supplier of steam turbines and main engine guard valves on all aircraft carrier programs. The acquired business operates within the Power segment.

4. RECEIVABLES

Receivables include current notes, amounts billed to customers, claims, other receivables, and unbilled revenue on long-term contracts, which consists of amounts recognized as sales but not billed. Substantially all amounts of unbilled receivables are expected to be billed and collected in the subsequent year. An immaterial amount of unbilled receivables are subject to retainage provisions. The amount of claims and unapproved change orders within our receivables balances are immaterial.

Credit risk is diversified due to the large number of entities comprising the Corporation's customer base and their geographic dispersion. The Corporation is either a prime contractor or subcontractor to various agencies of the U.S. Government. Revenues derived directly and indirectly from government sources (primarily the U.S. Government) were 43% and 40% of total net sales in 2019 and 2018, respectively. Total receivables due from government sources (primarily the U.S. Government) were \$343.5 million and \$329.1 million as of December 31, 2019 and 2018, respectively. Government (primarily the U.S. Government) unbilled receivables, net of progress payments, were \$195.7 million and \$180.0 million as of December 31, 2019 and 2018, respectively.

The composition of receivables as of December 31 is as follows:

<i>(In thousands)</i>	2019	2018
Billed receivables:		
Trade and other receivables	\$ 418,968	\$ 390,306
Less: Allowance for doubtful accounts	(8,733)	(7,436)
Net billed receivables	410,235	382,870
Unbilled receivables:		
Recoverable costs and estimated earnings not billed	231,067	225,810
Less: Progress payments applied	(9,108)	(14,925)
Net unbilled receivables	221,959	210,885
Receivables, net	\$ 632,194	\$ 593,755

5. INVENTORIES

Inventoried costs contain amounts relating to long-term contracts and programs with long production cycles, a portion of which will not be realized within one year. The caption "Inventoried costs related to U.S. Government and other long-term contracts" includes an immaterial amount of claims or other similar items subject to uncertainty concerning their determination or realization. Inventories are valued at the lower of cost or net realizable value.

The composition of inventories as of December 31 is as follows:

<i>(In thousands)</i>	2019	2018
Raw material	\$ 183,576	\$ 214,442
Work-in-process	105,874	74,536
Finished goods	131,124	143,016
Inventoried costs related to U.S. Government and other long-term contracts ⁽¹⁾	70,998	54,195
Gross inventories	491,572	486,189
Less: Inventory reserves	(58,594)	(55,776)
Progress payments applied	(8,143)	(6,987)
Inventories, net	\$ 424,835	\$ 423,426

⁽¹⁾ As of December 31, 2019 and 2018, this caption also includes capitalized development costs of \$39.1 million and \$44.4 million, respectively, related to certain aerospace and defense programs. These capitalized costs will be liquidated as units are produced under contract. As of December 31, 2019 and 2018, capitalized development costs of \$23.7 million and \$24.1 million, respectively, are not currently supported by existing firm orders.

6. PROPERTY, PLANT, AND EQUIPMENT

The composition of property, plant, and equipment as of December 31 is as follows:

<i>(In thousands)</i>	2019	2018
Land	\$ 18,632	\$ 18,548
Buildings and improvements	234,112	226,743
Machinery, equipment, and other	849,527	801,169
Property, plant, and equipment, at cost	1,102,271	1,046,460
Less: Accumulated depreciation	(716,678)	(671,800)
Property, plant, and equipment, net	\$ 385,593	\$ 374,660

Depreciation expense for the years ended December 31, 2019, 2018, and 2017 was \$57.4 million, \$59.4 million, and \$61.6 million, respectively.

7. GOODWILL

The changes in the carrying amount of goodwill for 2019 and 2018 are as follows:

<i>(In thousands)</i>	Commercial/Industrial	Defense	Power	Consolidated
December 31, 2017	\$ 448,531	\$ 460,332	\$ 187,466	\$ 1,096,329
Acquisitions	—	—	9,928	9,928
Divestitures	(111)	(1,594)	—	(1,705)
Foreign currency translation adjustment	(6,405)	(9,867)	(248)	(16,520)
December 31, 2018	\$ 442,015	\$ 448,871	\$ 197,146	\$ 1,088,032
Acquisitions	—	71,644	—	71,644
Adjustments	—	(208)	—	(208)
Foreign currency translation adjustment	2,099	4,962	151	7,212
December 31, 2019	\$ 444,114	\$ 525,269	\$ 197,297	\$ 1,166,680

The purchase price allocations relating to the businesses acquired are initially based on estimates. The Corporation adjusts these estimates based upon final analysis, including input from third party appraisals when deemed appropriate. The determination of fair value is finalized no later than twelve months from acquisition. Goodwill adjustments represent subsequent adjustments to the purchase price allocation for acquisitions.

The Corporation completed its annual goodwill impairment testing as of October 31, 2019, 2018, and 2017 and concluded that there was no impairment of goodwill.

8. OTHER INTANGIBLE ASSETS, NET

Intangible assets are generally the result of acquisitions and consist primarily of purchased technology, customer related intangibles, and trademarks. Intangible assets are amortized over useful lives that generally range between 1 and 20 years.

The following tables present the cumulative composition of the Corporation's intangible assets as of December 31, 2019 and December 31, 2018, respectively.

<i>(In thousands)</i>	2019			2018		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Technology	\$ 257,676	\$ (140,390)	\$ 117,286	\$ 238,212	\$ (123,156)	\$ 115,056
Customer related intangibles	434,492	(215,855)	218,637	358,832	(193,455)	165,377
Programs ⁽¹⁾	144,000	(12,600)	131,400	144,000	(5,400)	138,600
Other intangible assets	43,729	(31,145)	12,584	40,340	(29,806)	10,534
Total	\$ 879,897	\$ (399,990)	\$ 479,907	\$ 781,384	\$ (351,817)	\$ 429,567

⁽¹⁾ Programs include values assigned to major programs of acquired businesses and represent the aggregate value associated with the customer relationships, contracts, technology, and trademarks underlying the associated program.

During the year ended December 31, 2019, the Corporation acquired intangible assets of \$94.4 million which included Customer-related intangibles of \$73.3 million, Technology of \$17.7 million, and Other intangible assets of \$3.4 million. The weighted average amortization periods for these aforementioned intangible assets are 14.1 years, 15.0 years, and 8.0 years, respectively.

Amortization expense for the years ended December 31, 2019, 2018, and 2017 was \$45.0 million, \$43.6 million, and \$38.4 million, respectively. The estimated future amortization expense of intangible assets over the next five years is as follows:

<i>(In thousands)</i>	
2020	\$ 55,360
2021	45,692
2022	43,149
2023	39,398
2024	36,010

9. LEASES

The Corporation conducts a portion of its operations from leased facilities, which include manufacturing and service facilities, administrative offices, and warehouses. In addition, the Corporation leases vehicles, machinery, and office equipment under operating leases. Our leases have remaining lease terms of 1 year to 25 years, some of which include options for renewals, escalations, or terminations. Rental expenses for all operating leases amounted to \$37.2 million, \$38.4 million, and \$37.1 million in 2019, 2018, and 2017, respectively.

Generally, the Corporation's lease contracts do not provide a readily determinable interest rate. Accordingly, the Corporation determines the incremental borrowing rate as of the lease commencement date in order to calculate the present value of its lease payments. The incremental borrowing rate is determined based on information available at the lease commencement date, including the lease term, market rates for the Corporation's outstanding debt, as well as market rates for debt of companies with similar credit ratings.

The components of lease expense were as follows:

<i>(In thousands)</i>	Year Ended December 31, 2019	
Operating lease cost	\$	37,229
Finance lease cost:		
Depreciation of finance leases	\$	812
Interest on lease liabilities		498
Total finance lease cost	\$	1,310

Supplemental cash flow information related to leases was as follows:

<i>(In thousands)</i>	Year Ended December 31, 2019	
Cash used for operating activities:		
Operating cash flows used for operating leases	\$	(30,665)
Operating cash flows used for finance leases		(498)
Non-cash activity:		
Right-of-use assets obtained in exchange for operating lease obligations	\$	36,033

Supplemental balance sheet information related to leases was as follows:

<i>(In thousands, except lease term and discount rate)</i>	As of December 31, 2019	
Operating Leases		
Operating lease right-of-use assets, net	\$	165,490
Other current liabilities	\$	26,773
Long-term operating lease liability		145,124
Total operating lease liabilities	\$	171,897
Finance Leases		
Property, plant, and equipment	\$	15,561
Accumulated depreciation		(5,533)
Property, plant, and equipment, net	\$	10,028
Other current liabilities	\$	807
Other liabilities		10,982
Total finance lease liabilities	\$	11,789
Weighted average remaining lease term		
Operating leases		9.2 years
Finance leases		9.7 years
Weighted average discount rate		
Operating leases		3.75 %
Finance leases		4.05 %

Maturities of lease liabilities were as follows:

<i>(In thousands)</i>	As of December 31, 2019	
	Operating Leases	Finance Leases
2020	\$ 32,528	\$ 1,342
2021	29,729	1,375
2022	23,432	1,410
2023	21,168	1,445
2024	18,640	1,481
Thereafter	79,982	7,411
Total lease payments	205,479	14,464
Less: imputed interest	(33,582)	(2,675)
Total	\$ 171,897	\$ 11,789

As of December 31, 2018, the approximate future minimum rental commitments under operating leases that had initial or remaining non-cancelable lease terms in excess of one year were as follows:

<i>(In thousands)</i>	Rental Commitments
2019	\$ 29,562
2020	28,514
2021	24,501
2022	19,996
2023	19,778
Thereafter	93,974
Total	\$ 216,325

10. FAIR VALUE OF FINANCIAL INSTRUMENTS

Forward Foreign Exchange and Currency Option Contracts

The Corporation has foreign currency exposure, primarily in the United Kingdom, Canada, and Europe. The Corporation uses financial instruments, such as forward and option contracts, to hedge a portion of existing and anticipated foreign currency denominated transactions. The purpose of the Corporation's foreign currency risk management program is to reduce volatility in earnings caused by exchange rate fluctuations. Guidance on accounting for derivative instruments and hedging activities requires companies to recognize all of the derivative financial instruments as either assets or liabilities at fair value in the Consolidated Balance Sheets.

Interest Rate Risks and Related Strategies

The Corporation's primary interest rate exposure results from changes in U.S. dollar interest rates. The Corporation's policy is to manage interest cost using a mix of fixed and variable rate debt. The Corporation periodically uses interest rate swaps to manage such exposures. Under these interest rate swaps, the Corporation exchanges, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount. The Corporation's foreign exchange contracts and interest rate swaps are considered Level 2 instruments which are based on market based inputs or unobservable inputs and corroborated by market data such as quoted prices, interest rates, or yield curves.

For interest rate swaps designated as fair value hedges (i.e., hedges against the exposure to changes in the fair value of an asset or a liability or an identified portion thereof that is attributable to a particular risk), changes in the fair value of the interest rate swaps offset changes in the fair value of the fixed rate debt due to changes in market interest rates.

As of December 31, 2019 and December 31, 2018, the Corporation did not have any active interest rate swaps.

Effects on Consolidated Balance Sheet

As of December 31, 2019 and December 31, 2018, the fair values of the asset and liability derivative instruments were immaterial.

Effects on Consolidated Statement of Earnings

Undesignated hedges

The location and amount of (gains) and losses recognized in income on forward exchange derivative contracts not designated for hedge accounting for the years ended December 31, were as follows:

<i>(In thousands)</i>	2019	2018	2017
Forward exchange contracts:			
General and administrative expenses	\$ (2,072)	\$ 6,643	\$ (346)

Debt

The estimated fair value amounts were determined by the Corporation using available market information, which is primarily based on quoted market prices for the same or similar issues as of December 31, 2019. The fair values of our debt instruments are characterized as Level 2 measurements which are based on market-based inputs or unobservable inputs and corroborated by market data such as quoted prices, interest rates, or yield curves. The estimated fair values of the Corporation's fixed rate debt instruments as of December 31, 2019, net of debt issuance costs, totaled \$783 million compared to a carrying value, net of debt issuance costs, of \$749 million. The estimated fair values of the Corporation's fixed rate debt instruments as of December 31, 2018, net of debt issuance costs, totaled \$750 million compared to a carrying value, net of debt issuance costs, of \$749 million.

The fair values described above may not be indicative of net realizable value or reflective of future fair values. Furthermore, the use of different methodologies to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

11. ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

Accrued expenses consist of the following as of December 31:

<i>(In thousands)</i>	2019	2018
Accrued compensation	\$ 119,293	\$ 118,479
Accrued commissions	6,678	7,769
Accrued interest	8,982	8,944
Accrued insurance	7,550	6,951
Other	22,241	24,811
Total accrued expenses	\$ 164,744	\$ 166,954

Other current liabilities consist of the following as of December 31:

<i>(In thousands)</i>	2019	2018
Short-term lease liabilities	\$ 26,773	\$ —
Warranty reserves	\$ 17,512	\$ 17,293
Pension and other postretirement liabilities	6,690	6,528
Other	23,227	21,008
Total other current liabilities	\$ 74,202	\$ 44,829

12. INCOME TAXES

2017 Tax Cuts and Jobs Act

On December 22, 2017, the 2017 Tax Cuts and Jobs Act (the Tax Act) was enacted into law. The new legislation contained several key tax provisions, including a one-time mandatory transition tax on accumulated foreign earnings and a reduction of the U.S. corporate income tax rate to 21%. The Corporation will also generally be eligible for a 100% dividends received exemption on its foreign earnings. The Tax Act subjects a U.S. shareholder to tax on global intangible low-taxed income ("GILTI") earned by certain foreign subsidiaries. The Corporation has applied an accounting policy election to provide for the tax expense related to GILTI in the year in which the tax is incurred.

The Corporation has summarized the most significant impacts from the Tax Act below:

Reduction of the U.S. Corporate Income Tax Rate

The Corporation measures deferred tax assets and liabilities using enacted tax rates that are applicable in the years in which the temporary differences are expected to be recovered or paid. Accordingly, the Corporation's deferred tax assets and liabilities were remeasured to reflect the reduction of the U.S. corporate income tax rate from 35 percent to 21 percent, resulting in a provisional \$13.4 million decrease in income tax expense for the year ended December 31, 2017.

Transition Tax on Foreign Earnings

The Corporation recorded provisional income tax expense of \$18.2 million for the year ended December 31, 2017 related to the one-time transition tax on certain foreign earnings. The finalized transition tax of \$23.6 million was to be paid over eight years pursuant to the Tax Act, with \$1.9 million paid in 2018. An additional \$12.7 million carryforward from the 2017 income tax return further reduced the transition tax liability to \$9.0 million as of December 31, 2018. The liability of \$9.0 million, which is expected to be paid in 2024 and 2025, remained unchanged as of December 31, 2019.

Given that foreign undistributed earnings are no longer considered permanently reinvested, the Corporation also recorded provisional income tax expense of \$3.8 million for the year ended December 31, 2017 for withholding taxes that would arise upon distribution of the Corporation's foreign undistributed earnings.

During the year ended December 31, 2018, the Corporation recorded additional tax expense of \$9.3 million for foreign withholding taxes associated with the Tax Act, \$6.5 million of which related to the prior period.

During the year ended December 31, 2019, the Corporation recorded tax expense of \$4.4 million for foreign withholding taxes. The Corporation is considered permanently reinvested to the extent of any outside basis differences in its foreign subsidiaries in excess of the amount of undistributed earnings.

Earnings before income taxes for the years ended December 31 consist of:

<i>(In thousands)</i>	2019	2018	2017
Domestic	\$ 273,036	\$ 217,374	\$ 179,006
Foreign	123,426	138,865	120,613
	\$ 396,462	\$ 356,239	\$ 299,619

The provision for income taxes for the years ended December 31 consists of:

<i>(In thousands)</i>	2019	2018	2017
Current:			
Federal	\$ 14,195	\$ 37,648	\$ 54,963
State	3,766	9,228	2,648
Foreign	24,816	25,285	23,162
Total current	42,777	72,161	80,773
Deferred:			
Federal	38,647	8,518	2,595
State	6,632	(1,047)	4,282
Foreign	823	858	(2,922)
Total deferred	46,102	8,329	3,955
Provision for income taxes	\$ 88,879	\$ 80,490	\$ 84,728

The effective tax rate varies from the U.S. federal statutory tax rate for the years ended December 31, principally:

	2019	2018	2017
U.S. federal statutory tax rate	21.0 %	21.0 %	35.0 %
Add (deduct):			
State and local taxes, net of federal benefit	2.4	2.2	1.8
R&D tax credits	(1.2)	(1.0)	(1.3)
Foreign earnings ⁽¹⁾	1.4	0.9	(6.0)
Stock compensation - excess tax benefits	(0.8)	(1.3)	(2.6)
Impacts related to the Tax Act	—	1.8	3.4
Foreign-derived intangible income	(1.3)	(0.8)	—
All other, net	0.9	(0.2)	(2.0)
Effective tax rate	22.4 %	22.6 %	28.3 %

⁽¹⁾ Foreign earnings primarily include the net impact of differences between local statutory rates and the U.S. Federal statutory rate, the cost of repatriating foreign earnings, and the impact of changes to foreign valuation allowances.

The components of the Corporation's deferred tax assets and liabilities as of December 31 are as follows:

<i>(In thousands)</i>	2019	2018
Deferred tax assets:		
Operating lease liabilities	\$ 35,299	\$ —
Inventories, net	15,220	14,154
Net operating loss	8,328	9,868
Environmental reserves	8,239	8,613
Incentive compensation	8,130	8,472
Pension and other postretirement liabilities	5,029	35,656
Capital loss carryover	955	6,972
Other	33,002	27,795
Total deferred tax assets	114,202	111,530
Deferred tax liabilities:		
Goodwill amortization	77,620	70,850
Operating lease right-of-use assets, net	33,915	—
Other intangible amortization	30,954	33,600
Depreciation	25,562	24,983
Withholding taxes	13,097	10,300
Other	7,524	5,345
Total deferred tax liabilities	188,672	145,078
Valuation allowance	3,386	11,646
Net deferred tax liabilities	\$ 77,856	\$ 45,194

Deferred tax assets and liabilities are reflected on the Corporation's consolidated balance sheet as of December 31 as follows:

<i>(In thousands)</i>	2019	2018
Net noncurrent deferred tax assets	2,303	1,927
Net noncurrent deferred tax liabilities	80,159	47,121
Net deferred tax liabilities	\$ 77,856	\$ 45,194

The Corporation has income tax net operating loss carryforwards related to international operations of \$15.4 million, of which \$13.0 million have an indefinite life and \$2.4 million which expire through 2026. The Corporation has federal and state income tax net loss carryforwards of \$67.3 million, of which \$63.4 million are net operating losses which expire through 2038 and \$3.9 million are capital loss carryforwards which expire through 2020. The Corporation has recorded a deferred tax asset of \$9.3 million, reflecting the benefit of the loss carryforwards.

Management assesses the available positive and negative evidence to estimate if sufficient future taxable income will be generated to utilize the existing deferred tax assets. A significant piece of objective negative evidence evaluated was the

cumulative loss incurred over the three-year period ended December 31, 2019 in certain of the Corporation's foreign locations. Such objective evidence limits the ability to consider other subjective evidence such as projections for future growth. The Corporation decreased its valuation allowance by \$8.3 million to \$3.4 million, as of December 31, 2019, in order to measure only the portion of the deferred tax asset that more likely than not will be realized. The amount of the deferred tax asset considered realizable, however, could be adjusted if estimates of future taxable income during the carryforward period are reduced or if objective negative evidence in the form of cumulative losses is no longer present and additional weight may be given to subjective evidence such as projections for growth.

Income tax payments, net of refunds, of \$63.9 million, \$79.1 million, and \$92.1 million were made in 2019, 2018, and 2017, respectively.

The Corporation has recorded a liability in Other liabilities for interest of \$3.3 million and penalties of \$1.6 million as of December 31, 2019.

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

<i>(In thousands)</i>	2019	2018	2017
Balance as of January 1,	\$ 13,563	\$ 13,174	\$ 11,454
Additions for tax positions of prior periods	581	88	1,069
Reductions for tax positions of prior periods	(2,184)	(290)	(194)
Additions for tax positions related to the current year	936	1,036	1,273
Settlements	(220)	(445)	(428)
Balance as of December 31,	\$ 12,676	\$ 13,563	\$ 13,174

In many cases, the Corporation's uncertain tax positions are related to tax years that remain subject to examination by tax authorities.

The following describes the open tax years, by major tax jurisdiction, as of December 31, 2019:

United States (Federal)	2016	-	present
United States (Various states)	2008	-	present
United Kingdom	2012	-	present
Canada	2013	-	present

The Corporation does not expect any significant changes to the estimated amount of liability associated with its uncertain tax positions through the next twelve months. Included in total unrecognized tax benefits as of December 31, 2019, 2018, and 2017 is \$10.2 million, \$11.0 million, and \$10.1 million, respectively, which if recognized, would favorably impact the effective income tax rate.

13. DEBT

Debt consists of the following as of December 31:

<i>(In thousands)</i>	2019	2019	2018	2018
	Carrying Value	Estimated Fair Value	Carrying Value	Estimated Fair Value
3.84% Senior notes due 2021	100,000	102,079	100,000	100,359
3.70% Senior notes due 2023	202,500	207,882	202,500	201,813
3.85% Senior notes due 2025	90,000	93,838	90,000	89,711
4.24% Senior notes due 2026	200,000	213,126	200,000	202,288
4.05% Senior notes due 2028	67,500	71,260	67,500	66,942
4.11% Senior notes due 2028	90,000	95,607	90,000	89,647
Other debt	—	—	243	243
Total debt	750,000	783,792	750,243	751,003
Debt issuance costs, net	(594)	(594)	(714)	(714)
Unamortized interest rate swap proceeds ⁽¹⁾	11,233	11,233	13,027	13,027
Total debt, net	760,639	794,431	762,556	763,316
Less: current portion of long-term debt and short-term debt	—	—	243	243
Total long-term debt	\$ 760,639	\$ 794,431	\$ 762,313	\$ 763,073

⁽¹⁾ Represents the gain from termination of the Corporation's interest rate swap agreements on its 3.85% and 4.24% Senior Notes in February 2016, which will be amortized into interest expense over the remaining terms of the respective notes.

The weighted-average interest rate of the Corporation's Revolving Credit Agreement in 2019 and 2018 was 3.3% and 3.2%, respectively.

The Corporation's total debt outstanding had a weighted-average interest rate of 3.7% in both 2019 and 2018, respectively.

Aggregate maturities of debt are as follows:

<i>(In thousands)</i>	
2020	\$ —
2021	100,000
2022	—
2023	202,500
2024	—
Thereafter	447,500
Total	\$ 750,000

Interest payments of \$30 million, \$32 million, and \$39 million were made in 2019, 2018, and 2017, respectively.

Revolving Credit Agreement

In October 2018, the Corporation amended the terms of its existing Credit Agreement (Credit Agreement) with a syndicate of financial institutions, led by Bank of America N.A., Wells Fargo, N.A., and JP Morgan Chase Bank, N.A.. The amended agreement, which provides the Corporation with a borrowing capacity of \$500 million, extended the maturity date from November 2019 to October 2023 and expanded the accordion feature from \$100 million to \$200 million. The proceeds available under the Credit Agreement are to be used for working capital, internal growth initiatives, funding of future acquisitions, and general corporate purposes. As of December 31, 2019, the Corporation had \$33 million in letters of credit supported by the credit facility and no borrowings outstanding under the credit facility. The unused credit available under the credit facility as of December 31, 2019 was \$467 million, which the Corporation had the ability to borrow in full without violating its debt to capitalization covenant.

The Credit Agreement contains covenants that the Corporation considers usual and customary for an agreement of this type for comparable commercial borrowers, including a maximum consolidated debt to capitalization ratio of 60%. The Credit Agreement has customary events of default, such as non-payment of principal when due; nonpayment of interest, fees, or other amounts; cross-payment default and cross-acceleration.

Borrowings under the credit agreement accrue interest based on (i) Libor or (ii) a base rate of the highest of (a) the federal funds rate plus 0.5%, (b) BofA's announced prime rate, or (c) the Eurocurrency rate plus 1%, plus a margin. The interest rate and level of facility fees are dependent on certain financial ratios, as defined in the Credit Agreement. The Credit Agreement also provides customary fees, including administrative agent and commitment fees. In connection with the Credit Agreement, the Corporation paid customary transaction fees that have been deferred and are being amortized over the term of the Credit Agreement.

Senior Notes

On February 26, 2013, the Corporation issued \$500 million of Senior Notes (the "2013 Notes"). The 2013 Notes consisted of \$225 million of 3.70% Senior Notes that mature on February 26, 2023, \$100 million of 3.85% Senior Notes that mature on February 26, 2025, and \$75 million of 4.05% Senior Notes that mature on February 26, 2028. \$100 million of additional 4.11% Senior Notes were deferred and subsequently issued on September 26, 2013 that mature on September 26, 2028. On October 15, 2018, the Corporation made a discretionary \$50 million prepayment on the \$500 million 2013 Notes. The 2013 Notes are senior unsecured obligations, equal in right of payment to the Corporation's existing senior indebtedness. The Corporation, at its option, can prepay at any time all or any part of the 2013 Notes, subject to a make-whole payment in accordance with the terms of the Note Purchase Agreement. In connection with the issuance of the 2013 Notes, the Corporation paid customary fees that have been deferred and are being amortized over the term of the 2013 Notes. Under the terms of the Note Purchase Agreement, the Corporation is required to maintain certain financial ratios, the most restrictive of which is a debt to capitalization limit of 60%. The debt to capitalization ratio (as defined per the Notes Purchase Agreement and Credit Agreement) is calculated using the same formula for all of the Corporation's debt agreements and is a measure of the Corporation's indebtedness to capitalization, where capitalization equals debt plus equity. As of December 31, 2019, the Corporation had the ability to borrow additional debt of \$1.8 billion without violating our debt to capitalization covenant. The 2013 Notes also contain a cross default provision with respect to the Corporation's other senior indebtedness.

On December 8, 2011, the Corporation issued \$300 million of Senior Notes (the "2011 Notes"). The 2011 Notes consist of \$100 million of 3.84% Senior Notes that mature on December 1, 2021 and \$200 million of 4.24% Senior Series Notes that mature on December 1, 2026. The 2011 Notes are senior unsecured obligations, equal in right of payment to our existing senior indebtedness. The Corporation, at its option, can prepay at any time all or any part of our 2011 Notes, subject to a make-whole payment in accordance with the terms of the Note Purchase Agreement. In connection with our 2011 Notes, the Corporation paid customary fees that have been deferred and are being amortized over the term of our 2011 Notes. Under the Note Purchase Agreement, the Corporation is required to maintain certain financial ratios, the most restrictive of which is a debt to capitalization limit of 60%. The 2011 Notes also contain a cross default provision with our other senior indebtedness.

14. EARNINGS PER SHARE

The Corporation is required to report both basic earnings per share (EPS), based on the weighted-average number of common shares outstanding, and diluted earnings per share, based on the basic EPS adjusted for all potentially dilutive shares issuable.

As of December 31, 2019, 2018, and 2017, there were no options outstanding that were considered anti-dilutive.

Earnings per share calculations for the years ended December 31, 2019, 2018, and 2017, were as follows:

<i>(In thousands, except per share data)</i>	Net Earnings	Weighted-Average Shares Outstanding	Earnings per Share
2019			
Basic earnings per share	\$ 307,583	42,739	\$ 7.20
Dilutive effect of stock options and deferred stock compensation		277	
Diluted earnings per share	\$ 307,583	43,016	\$ 7.15
2018			
Basic earnings per share	\$ 275,749	43,892	\$ 6.28
Dilutive effect of stock options and deferred stock compensation		424	
Diluted earnings per share	\$ 275,749	44,316	\$ 6.22
2017			
Basic earnings per share	\$ 214,891	44,182	\$ 4.86
Dilutive effect of stock options and deferred stock compensation		579	
Diluted earnings per share	\$ 214,891	44,761	\$ 4.80

15. SHARE-BASED COMPENSATION PLANS

In May 2014, the Corporation adopted the Curtiss-Wright 2014 Omnibus Incentive Plan (the “2014 Omnibus Plan”). The plan replaced the Corporation’s existing 2005 Long Term Incentive Plan and the 2005 Stock Plan for Non-Employee Directors (collectively the “2005 Stock Plans”). Beginning in May 2014, all awards were granted under the 2014 Omnibus Plan. The maximum aggregate number of shares of common stock that may be issued under the 2014 Omnibus Plan are 2,400,000 less one share of common stock for every one share of common stock granted under any prior plan after December 31, 2013 and prior to the effective date of the 2014 Omnibus Plan. In addition, any awards that were previously granted under any prior plan that terminate without issuance of shares shall be eligible for issuance under the 2014 Omnibus Plan. Awards under the 2014 Omnibus Plan may be in the form of stock options, stock appreciation rights, restricted stock, restricted stock units (RSU), other stock-based awards, performance share units (PSU), or cash-based performance units (PU).

During 2019, the Corporation granted share-based awards in the form of RSUs, PSUs, and restricted stock. Previous grants under the 2005 Stock Plans included non-qualified stock options. Under our employee benefit program, the Corporation also provides an Employee Stock Purchase Plan (ESPP) to most active employees. Certain awards provide for accelerated vesting if there is a change in control.

The compensation cost for employee and non-employee director share-based compensation programs during 2019, 2018, and 2017 is as follows:

<i>(In thousands)</i>	2019	2018	2017
Employee Stock Purchase Plan	1,585	1,435	1,207
Performance Share Units	4,853	4,746	4,340
Restricted Share Units	6,061	7,026	4,931
Other share-based payments	1,170	887	1,094
Total share-based compensation expense before income taxes	\$ 13,669	\$ 14,094	\$ 11,572

Other share-based grants include service-based restricted stock awards to non-employee directors, who are treated as employees as prescribed by the accounting guidance on share-based payments. The compensation cost recognized follows the cost of the employee, which is primarily reflected as general and administrative expense in the Consolidated Statement of Earnings. No share-based compensation costs were capitalized during 2019, 2018, or 2017.

The following table summarizes the cash received from share-based awards on share-based compensation:

<i>(In thousands)</i>	2019	2018	2017
Cash received from share-based awards	\$ 11,770	\$ 11,940	\$ 14,179

A summary of employee stock option activity is as follows:

	Shares (000's)	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term in Years	Aggregate Intrinsic Value (000's)
Outstanding as of December 31, 2018	158	\$ 30.34		
Exercised	(91)	30.64		
Forfeited	(1)	30.90		
Outstanding as of December 31, 2019	66	\$ 29.93	0.9	\$ 7,396
Exercisable as of December 31, 2019	66	\$ 29.93	0.9	\$ 7,396

The total intrinsic value of stock options exercised during 2019, 2018, and 2017 was \$8.7 million, \$10.1 million, and \$12.7 million, respectively.

Performance Share Units

The Corporation has granted performance share units to certain employees, whose three-year cliff vesting is contingent upon the Corporation's total shareholder return over the three-year term of the awards compared to a self-constructed peer group. The non-vested shares are subject to forfeiture if established performance goals are not met or employment is terminated other than due to death, disability, or retirement. Share plans are denominated in share-based units based on the fair market value of the Corporation's common stock on the date of grant. The performance share unit's compensation cost is amortized to expense on a straight-line basis over the three-year requisite service period.

Restricted Share Units

Restricted share units cliff vest at the end of the awards' vesting period. The restricted share units are service-based and thus compensation cost is amortized to expense on a straight-line basis over the requisite service period, which is typically three years. The non-vested restricted units are subject to forfeiture if employment is terminated other than due to death, disability, or retirement.

A summary of the Corporation's 2019 activity related to performance share units and restricted share units are as follows:

	Performance Share Units (PSUs)		Restricted Share Units (RSUs)	
	Shares/Units (000's)	Weighted- Average Fair Value	Shares/Units (000's)	Weighted- Average Fair Value
Nonvested as of December 31, 2018	117	\$ 101.70	137	\$ 54.66
Granted	50	121.15	76	114.98
Vested	(68)	86.43	(58)	98.61
Forfeited	(2)	155.91	(6)	117.48
Nonvested as of December 31, 2019	97	\$ 149.99	149	\$ 105.42
Expected to vest as of December 31, 2019	97	\$ 149.99	149	\$ 105.42

Nonvested PSUs had an intrinsic value of \$13.7 million and unrecognized compensation costs of \$4.8 million as of December 31, 2019. Nonvested RSUs had an intrinsic value of \$20.9 million and unrecognized compensation costs of \$8.7 million as of December 31, 2019. Unrecognized compensation costs related to PSUs and RSUs are expected to be recognized over 1.6 years and 2.3 years, respectively.

Employee Stock Purchase Plan

The Corporation's ESPP enables eligible employees to purchase the Corporation's common stock at a price per share equal to 85% of the fair market value at the end of each offering period. Each offering period of the ESPP lasts six months, commencing on January 1st and July 1st of each year. Compensation cost is recognized on a straight-line basis over the six-month vesting period during which employees perform related services.

16. PENSION AND OTHER POSTRETIREMENT BENEFIT PLANS

The Corporation maintains ten separate and distinct pension and other post-retirement defined benefit plans, consisting of three domestic plans and seven separate foreign pension plans. The domestic plans include a qualified pension plan, a non-qualified pension plan, and a postretirement health-benefits plan. The foreign plans consist of one defined benefit pension plan each in the United Kingdom, Canada, and Switzerland, two in Germany, and two in Mexico.

Domestic Plans

Qualified Pension Plan

The Corporation maintains a defined benefit pension plan (the “CW Pension Plan”) covering certain employee populations under six benefit formulas: a non-contributory non-union and union formula for certain Curtiss-Wright (CW) employees, a contributory union and non-union benefit formula for employees at the EMD business unit, and two benefit formulas providing annuity benefits for participants in the former Williams Controls salaried and union plans.

CW non-union employees hired prior to February 1, 2010 receive a “traditional” benefit based on years of credited service, using the five highest consecutive years’ compensation during the last ten years of service. These employees became participants under the CW Pension Plan after one year of service and were vested after three years of service. CW non-union employees hired on or after the effective date were eligible for a cash balance benefit through December 31, 2013, and were transitioned to the new defined contribution plan, further described below. CW union employees who have negotiated a benefit under the CW Pension Plan are entitled to a benefit based on years of service multiplied by a monthly pension rate.

The formula for EMD employees covers both union and non-union employees and is designed to satisfy the requirements of relevant collective bargaining agreements. Employee contributions are withheld each pay period and are equal to 1.5% of salary. The benefits for the EMD employees are based on years of service and compensation. On December 31, 2012, the Corporation amended the CW Pension Plan to close the benefit to EMD employees hired after January 1, 2014.

Participants of the former Williams Controls Retirement Income Plan for salaried employees are either deferred vested participants or currently receiving benefits, as benefit accruals under the plan were frozen to future accruals effective January 1, 2003. Benefits in the salaried plan are based on average compensation and years of service.

Participants of the former Williams Controls UAW Local 492 Plan for union employees are entitled to a benefit based on years of service multiplied by a monthly pension rate, and may be eligible for supplemental benefits based upon attainment of certain age and service requirements.

Effective January 1, 2014, all active non-union employees participating in the final and career average pay formulas in the defined benefit plan will cease accruals 15 years from the effective date of the amendment. In addition to the sunset provision, cash balance benefit accruals for non-union participants ceased as of January 1, 2014. Non-union employees who were not currently receiving final or career average pay benefits became eligible to participate in a new defined contribution plan which provides both employer match and non-elective contribution components. Subsequent to the original amendment, the Corporation successfully negotiated the sunset provision into the bargaining agreements for all represented employees that received benefits through this plan.

As of December 31, 2019 and 2018, the Corporation had a noncurrent pension liability of \$50.2 million and \$26.6 million, respectively. This increase was driven by a decrease in the discount rate as of December 31, 2019, partially offset by favorable asset experience due to strong market returns during 2019.

On January 8, 2020, the Corporation made a voluntary contribution of \$150 million to the plan. The Corporation does not expect to make any required contributions through 2024.

Nonqualified Pension Plan

The Corporation also maintains a non-qualified restoration plan (the “CW Restoration Plan”) covering those employees of CW and EMD whose compensation or benefits exceed the IRS limitation for pension benefits. Benefits under the CW Restoration Plan are not funded, and, as such, the Corporation had an accrued pension liability of \$59.6 million and \$52.8 million as of December 31, 2019 and 2018, respectively. The Corporation’s contributions to the CW Restoration Plan are expected to be \$4.8 million in 2020.

Other Post-Employment Benefits (OPEB) Plan

The Corporation provides post-employment benefits consisting of retiree health and life insurance to three distinct groups of employees/retirees: the CW Grandfathered plan, and plans assumed in the acquisitions of EMD and Williams Controls.

The Corporation also provides retiree health and life insurance benefits for substantially all of the Curtiss-Wright EMD employees. The plan provides basic health and welfare coverage for pre-65 participants based on years of service and are subject to certain caps. Effective January 1, 2011, the Corporation modified the benefit design for post-65 retirees by introducing Retiree Reimbursement Accounts (RRAs) to participants in lieu of the traditional benefit delivery. Participant accounts are funded a set amount annually that can be used to purchase supplemental coverage on the open market, effectively capping the benefit.

The plan also provides retiree health and life insurance benefits for certain retirees of the Williams Controls salaried and union pension plans. Effective August 31, 2013, the Corporation modified the benefit design for post-65 retirees by introducing RRAs to align with the EMD delivery model.

The Corporation had an accrued postretirement benefit liability as of December 31, 2019 and 2018 of \$23.6 million and \$22.0 million, respectively. The Corporation expects to contribute \$1.5 million to the plan during 2020.

Foreign Plans

As of December 31, 2019 and 2018, the total projected benefit obligation related to all foreign plans was \$102.7 million and \$83.5 million, respectively. As of December 31, 2019 and 2018, the Corporation had a net pension (liability)/asset of \$(0.2) million and \$2.7 million, respectively. The Corporation's contributions to the foreign plans are expected to be \$2.3 million in 2020.

Components of net periodic benefit expense

The net pension and net postretirement benefit costs (income) consisted of the following:

<i>(In thousands)</i>	Pension Benefits			Postretirement Benefits		
	2019	2018	2017	2019	2018	2017
Service cost	\$ 23,664	\$ 27,116	\$ 25,093	\$ 432	\$ 490	\$ 435
Interest cost	29,019	26,149	25,895	796	719	762
Expected return on plan assets	(59,153)	(58,641)	(53,552)	—	—	—
Amortization of prior service cost	(283)	(252)	(100)	(656)	(656)	(656)
Recognized net actuarial loss/(gain)	9,310	16,867	12,925	(198)	(131)	(223)
Cost of settlements/curtailments	—	337	327	—	—	—
Net periodic benefit cost (income)	\$ 2,557	\$ 11,576	\$ 10,588	\$ 374	\$ 422	\$ 318

The cost of settlements/curtailments indicated above represents events that are accounted for under guidance on employers' accounting for settlements and curtailments of defined benefit pension plans. In 2018, a settlement charge was incurred in connection with a restructuring in Switzerland. In 2017, there were settlement charges incurred in both the U.K. and Switzerland.

The following table outlines the Corporation's consolidated disclosure of the pension benefits and postretirement benefits information described previously. The Corporation had no foreign postretirement plans. All plans were valued using a December 31, 2019 measurement date.

<i>(In thousands)</i>	Pension Benefits		Postretirement Benefits	
	2019	2018	2019	2018
Change in benefit obligation:				
Beginning of year	\$ 814,894	\$ 868,887	\$ 22,060	\$ 25,035
Service cost	23,664	27,116	432	490
Interest cost	29,019	26,149	796	719
Plan participants' contributions	1,276	1,402	346	319
Actuarial (gain) loss	118,893	(58,913)	2,124	(1,982)
Benefits paid	(43,736)	(41,962)	(2,192)	(2,521)
Actual expenses	(1,846)	(1,371)	—	—
Settlements	—	(2,228)	—	—
Currency translation adjustments	3,023	(4,186)	—	—
End of year	\$ 945,187	\$ 814,894	\$ 23,566	\$ 22,060
Change in plan assets:				
Beginning of year	\$ 738,296	\$ 776,482	\$ —	\$ —
Actual return on plan assets	133,896	(44,876)	—	—
Employer contribution	3,867	55,311	1,846	2,203
Plan participants' contributions	1,276	1,402	346	319
Benefits paid	(43,736)	(44,190)	(2,192)	(2,522)
Actual Expenses	(1,846)	(1,371)	—	—
Currency translation adjustments	3,386	(4,462)	—	—
End of year	\$ 835,139	\$ 738,296	\$ —	\$ —
Funded status	\$ (110,048)	\$ (76,598)	\$ (23,566)	\$ (22,060)

<i>(In thousands)</i>	Pension Benefits		Postretirement Benefits	
	2019	2018	2019	2018
Amounts recognized on the balance sheet				
Noncurrent assets	\$ 11,711	\$ 9,098	\$ —	\$ —
Current liabilities	(5,143)	(4,905)	(1,547)	(1,623)
Noncurrent liabilities	(116,616)	(80,791)	(22,019)	(20,437)
Total	\$ (110,048)	\$ (76,598)	\$ (23,566)	\$ (22,060)
Amounts recognized in accumulated other comprehensive income (AOCI)				
Net actuarial loss (gain)	\$ 263,660	\$ 228,430	\$ (2,429)	\$ (4,751)
Prior service cost	(934)	(1,225)	(1,404)	(2,060)
Total	\$ 262,726	\$ 227,205	\$ (3,833)	\$ (6,811)
Information for pension plans with an accumulated benefit obligation in excess of plan assets:				
Projected benefit obligation	\$ 881,731	\$ 743,632	N/A	N/A
Accumulated benefit obligation	848,309	714,146	N/A	N/A
Fair value of plan assets	759,972	658,327	N/A	N/A

Plan Assumptions

	Pension Benefits		Postretirement Benefits	
	2019	2018	2019	2018
Weighted-average assumptions in determination of benefit obligation:				
Discount rate	3.05 %	4.09 %	3.15 %	4.20 %
Rate of compensation increase	3.46 %	3.50 %	N/A	N/A
Health care cost trends:				
Rate assumed for subsequent year	N/A	N/A	7.50 %	7.85 %
Ultimate rate reached in 2026	N/A	N/A	4.50 %	4.50 %
Weighted-average assumptions in determination of net periodic benefit cost:				
Discount rate	4.09 %	3.46 %	4.20 %	3.54 %
Expected return on plan assets	7.59 %	7.47 %	N/A	N/A
Rate of compensation increase	3.50 %	3.50 %	N/A	N/A
Health care cost trends:				
Rate assumed for subsequent year	N/A	N/A	7.85 %	8.30 %
Ultimate rate reached in 2026	N/A	N/A	4.50 %	4.50 %

Effective December 31, 2016, the Corporation adopted the spot rate, or full yield curve, approach for developing discount rates. The discount rate for each plan's past service liabilities and service cost is determined by discounting the plan's expected future benefit payments using a yield curve developed from high quality bonds that are rated Aa or better by Moody's as of the measurement date. The yield curve calculation matches the notional cash inflows of the hypothetical bond portfolio with the expected benefit payments to arrive at one effective rate for these components. Interest cost is determined by applying the spot rate from the full yield curve to each anticipated benefit payment, based on the anticipated optional form elections.

The overall expected return on assets assumption is based on a combination of historical performance of the pension fund and expectations of future performance. Expected future performance is determined by weighting the expected returns for each asset class by the plan's asset allocation. The expected returns are based on long-term capital market assumptions utilizing a ten-year time horizon through consultation with investment advisors. While consideration is given to recent performance and historical returns, the assumption represents a long-term prospective return.

Pension Plan Assets

The overall objective for plan assets is to earn a rate of return over time to meet anticipated benefit payments in accordance with plan provisions. The long-term investment objective of the domestic retirement plans is to achieve a total rate of return, net of fees, which exceeds the actuarial overall expected return on asset assumptions used for funding purposes and which provides an appropriate premium over inflation. The intermediate-term objective of the domestic retirement plans, defined as three to five years, is to outperform each of the capital markets in which assets are invested, net of fees. During periods of extreme market volatility, preservation of capital takes a higher precedence than outperforming the capital markets.

The Finance Committee of the Corporation's Board of Directors is responsible for formulating investment policies, developing investment manager guidelines and objectives, and approving and managing qualified advisors and investment managers. The guidelines established define permitted investments within each asset class and apply certain restrictions such as limits on concentrated holdings, and prohibits selling securities short, buying on margin, and the purchase of any securities issued by the Corporation.

The Corporation maintains the funds of the CW Pension Plan under a trust that is diversified across investment classes and among investment managers to achieve an optimal balance between risk and return. As a part of its diversification strategy, the Corporation has established target allocations for each of the following assets classes: domestic equity securities, international equity securities, and debt securities. Below are the Corporation's actual and established target allocations for the CW Pension Plan, representing 88% of consolidated assets:

Asset class	As of December 31,		Target Exposure	Expected Range
	2019	2018		
Domestic equities	51%	48%	50%	40%-60%
International equities	15%	15%	15%	10%-20%
Total equity	66%	63%	65%	55%-75%
Fixed income	34%	37%	35%	25%-45%

As of December 31, 2019 and 2018, cash funds in the CW Pension Plan represented approximately 3% and 6% of portfolio assets, respectively.

Foreign plan assets represent 12% of consolidated plan assets, with the majority of the assets supporting the U.K. plan. Generally, the foreign plans follow a similar asset allocation strategy and are more heavily weighted in fixed income resulting in a weighted expected return on assets assumption of 4.3% for all foreign plans.

The Corporation may from time to time require the reallocation of assets in order to bring the retirement plans into conformity with these ranges. The Corporation may also authorize alterations or deviations from these ranges where appropriate for achieving the objectives of the retirement plans.

Fair Value Measurements

The following table presents consolidated plan assets (in thousands) as of December 31, 2019 using the fair value hierarchy, as described in Note 10 to the Consolidated Financial Statements.

Asset Category	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)			Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and cash equivalents	\$ 42,261	\$ 20,034	\$ 22,227	\$ —		
Equity securities- Mutual funds ⁽¹⁾	446,434	404,509	41,925	—		
Bond funds ⁽²⁾	238,880	177,731	61,149	—		
Insurance Contracts ⁽³⁾	8,408	—	—	8,408		
Other ⁽⁴⁾	2,313	—	—	2,313		
December 31, 2018	\$ 738,296	\$ 602,274	\$ 125,301	\$ 10,721		
Cash and cash equivalents	\$ 22,457	\$ 2,010	\$ 20,447	\$ —		
Equity securities- Mutual funds ⁽¹⁾	534,479	427,391	107,088	—		
Bond funds ⁽²⁾	273,979	211,372	62,607	—		
Insurance Contracts ⁽³⁾	—	—	—	—		
Other ⁽⁴⁾	4,224	—	—	4,224		
December 31, 2019	\$ 835,139	\$ 640,773	\$ 190,142	\$ 4,224		

⁽¹⁾ This category consists of domestic and international equity securities. It is comprised of U.S. securities benchmarked against the S&P 500 index and Russell 2000 index, international mutual funds benchmarked against the MSCI EAFE index, global equity index mutual funds associated with our U.K. based pension plans and balanced funds associated with the U.K. and Canadian based pension plans.

⁽²⁾ This category consists of domestic and international bonds. The domestic fixed income securities are benchmarked against the Bloomberg Barclays Capital Aggregate Bond index, actively-managed bond mutual funds comprised of domestic investment grade debt, fixed income derivatives, and below investment-grade issues, U.S. mortgage backed securities, asset backed securities, municipal bonds, and convertible debt. International bonds consist of bond mutual funds for institutional investors associated with the CW Pension Plan, Switzerland, and U.K. based pension plans.

⁽³⁾ This category had consisted of a guaranteed investment contract (GIC) in Switzerland. Effective January 2019, the Corporation replaced the collective foundation administering the plan and the GIC was not an available offering in the new plan.

(4) This category consists primarily of real estate investment trusts in Switzerland.

Valuation

Equity securities and exchange-traded equity and bond mutual funds are valued using a market approach based on the quoted market prices of identical instruments. Pooled institutional funds are valued at their net asset values and are calculated by the sponsor of the fund.

Fixed income securities are primarily valued using a market approach utilizing various underlying pricing sources and methodologies. Real estate investment trusts are priced at net asset value based on valuations of the underlying real estate holdings using inputs such as discounted cash flows, independent appraisals, and market-based comparable data.

Cash balances in the United States are held in a pooled fund and classified as a Level 2 asset. Non-U.S. cash is valued using a market approach based on quoted market prices of identical instruments.

The following table presents a reconciliation of Level 3 assets held during the years ended December 31, 2019 and 2018:

<i>(In thousands)</i>	Insurance Contracts	Other	Total
December 31, 2017	\$ 10,912	\$ 2,191	\$ 13,103
Actual return on plan assets:			
Relating to assets still held at the reporting date	163	(13)	150
Purchases, sales, and settlements	(2,595)	152	(2,443)
Foreign currency translation adjustment	(72)	(17)	(89)
December 31, 2018	\$ 8,408	\$ 2,313	\$ 10,721
Actual return on plan assets:			
Relating to assets still held at the reporting date	—	115	115
Purchases, sales, and settlements	(8,408)	1,715	(6,693)
Foreign currency translation adjustment	—	81	81
December 31, 2019	\$ —	\$ 4,224	\$ 4,224

Benefit Payments

The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid from the plans:

<i>(In thousands)</i>	Pension Plans	Postretirement Plans	Total
2020	\$ 49,446	\$ 1,547	\$ 50,993
2021	51,481	1,594	53,075
2022	52,608	1,589	54,197
2023	53,597	1,592	55,189
2024	57,406	1,566	58,972
2025 — 2029	282,548	7,306	289,854

Defined Contribution Retirement Plans

The Corporation offers all of its domestic employees the opportunity to participate in a defined contribution plan. Costs incurred by the Corporation in the administration and record keeping of the defined contribution plan are paid for by the Corporation and are not considered material.

Effective January 1, 2014, all non-union employees who were not currently receiving final or career average pay benefits became eligible to receive employer contributions in the Corporation's sponsored 401(k) plan, including both employer match and non-elective contribution components. Effective January 1, 2019, the employer contribution was increased to a maximum of 7% of eligible compensation from 6% previously. During the year ended December 31, 2019, the expense relating to the plan was \$17.8 million, consisting of \$9.1 million in matching contributions to the plan in 2019, and \$8.7 million in non-elective contributions paid in January 2020. Cumulative contributions of approximately \$97 million are expected to be made from 2020 through 2024.

In addition, the Corporation had foreign pension costs under various defined contribution plans of \$5.3 million, \$5.3 million, and \$4.2 million in 2019, 2018, and 2017, respectively.

17. SEGMENT INFORMATION

The Corporation's segments are composed of similar product groupings that serve the same or similar end markets. Based on this approach, the Corporation has three reportable segments: Commercial/Industrial, Defense, and Power, as described below in further detail.

The Commercial/Industrial reportable segment is comprised of businesses that provide a diversified offering of highly engineered products and services supporting critical applications primarily across the commercial aerospace and general industrial markets. The products offered include electronic throttle control devices and transmission shifters, electro-mechanical actuation control components, valves, and surface technology services such as shot peening, laser peening, coatings, and advanced testing.

The Defense reportable segment is comprised of businesses that primarily provide products to the defense markets and to a lesser extent the commercial aerospace market. The products offered include commercial off-the-shelf (COTS) embedded computing board level modules, integrated subsystems, turret aiming and stabilization products, weapons handling systems, avionics and electronics, flight test equipment, and aircraft data management solutions.

The Power segment is comprised of businesses that primarily provide products to the power generation markets and to a lesser extent the naval defense market. The products offered include main coolant pumps, power-dense compact motors, generators, secondary propulsion systems, pumps, pump seals, control rod drive mechanisms, fastening systems, specialized containment doors, airlock hatches, spent fuel management products, and fluid sealing products.

The Corporation's measure of segment profit or loss is operating income. Interest expense and income taxes are not reported on an operating segment basis as they are not considered in the segments' performance evaluation by the Corporation's chief operating decision-maker, its Chief Executive Officer.

Net sales and operating income by reportable segment are as follows:

	Year Ended December 31,		
<i>(In thousands)</i>	2019	2018	2017
Net sales			
Commercial/Industrial	\$ 1,240,697	\$ 1,209,943	\$ 1,163,510
Defense	580,845	559,058	557,954
Power	670,950	649,754	554,048
Less: Intersegment Revenues	(4,531)	(6,920)	(4,486)
Total Consolidated	\$ 2,487,961	\$ 2,411,835	\$ 2,271,026
<i>(In thousands)</i>	2019	2018	2017
Operating income (expense)			
Commercial/Industrial	\$ 196,455	\$ 182,669	\$ 168,146
Defense	129,653	128,446	109,338
Power	112,954	98,858	81,119
Corporate and Eliminations ⁽¹⁾	(35,109)	(36,347)	(33,483)
Total Consolidated	\$ 403,953	\$ 373,626	\$ 325,120

Depreciation and amortization expense			
Commercial/Industrial	\$ 48,227	\$ 50,690	\$ 53,180
Defense	21,495	20,578	20,702
Power	28,589	27,737	22,019
Corporate	4,101	3,944	4,094
Total Consolidated	<u>\$ 102,412</u>	<u>\$ 102,949</u>	<u>\$ 99,995</u>

Segment assets			
Commercial/Industrial	\$ 1,470,477	\$ 1,398,601	\$ 1,444,097
Defense	1,184,116	961,298	1,044,776
Power	804,432	720,073	482,753
Corporate	305,236	175,413	264,695
Total Consolidated	<u>\$ 3,764,261</u>	<u>\$ 3,255,385</u>	<u>\$ 3,236,321</u>

Capital expenditures			
Commercial/Industrial	\$ 34,077	\$ 30,411	\$ 29,028
Defense	4,034	5,793	9,276
Power	28,051	11,350	10,039
Corporate	3,590	5,863	4,362
Total Consolidated	<u>\$ 69,752</u>	<u>\$ 53,417</u>	<u>\$ 52,705</u>

⁽¹⁾ Corporate and Eliminations includes pension expense, environmental remediation and administrative expenses, legal, foreign currency transactional gains and losses, and other expenses.

Reconciliations

<i>(In thousands)</i>	Year Ended December 31,		
	2019	2018	2017
Earnings before taxes:			
Total segment operating income	\$ 439,062	\$ 409,973	\$ 358,603
Corporate and Eliminations	(35,109)	(36,347)	(33,483)
Interest expense	31,347	33,983	41,471
Other income, net	23,856	16,596	15,970
Total consolidated earnings before tax	<u>\$ 396,462</u>	<u>\$ 356,239</u>	<u>\$ 299,619</u>

<i>(In thousands)</i>	As of December 31,		
	2019	2018	2017
Assets:			
Total assets for reportable segments	\$ 3,459,025	\$ 3,079,972	\$ 2,971,626
Non-segment cash	235,260	138,053	204,664
Other assets	69,976	37,360	60,031
Total consolidated assets	<u>\$ 3,764,261</u>	<u>\$ 3,255,385</u>	<u>\$ 3,236,321</u>

Geographic Information

<i>(In thousands)</i>	Year Ended December 31,		
	2019	2018	2017
Revenues			
United States of America	\$ 1,710,371	\$ 1,623,511	\$ 1,562,180
United Kingdom	120,297	126,439	118,350
Other foreign countries	657,293	661,885	590,496
Consolidated total	<u>\$ 2,487,961</u>	<u>\$ 2,411,835</u>	<u>\$ 2,271,026</u>

<i>(In thousands)</i>	As of December 31,		
	2019	2018	2017
Long-Lived Assets - Property, plant, and equipment, net			
United States of America	\$ 271,609	\$ 258,504	\$ 264,829
United Kingdom	34,228	34,649	41,100
Other foreign countries	79,756	81,507	84,306
Consolidated total	<u>\$ 385,593</u>	<u>\$ 374,660</u>	<u>\$ 390,235</u>

Net sales by product line

<i>(In thousands)</i>	Year Ended December 31,		
	2019	2018	2017
Net sales			
Flow Control	\$ 1,051,821	\$ 1,008,262	\$ 899,705
Motion Control	1,130,593	1,090,703	1,075,218
Surface Technologies	305,547	312,870	296,103
Consolidated total	<u>\$ 2,487,961</u>	<u>\$ 2,411,835</u>	<u>\$ 2,271,026</u>

The Flow Control products include valves, pumps, motors, generators, and instrumentation that manage the flow of liquids and gases, generate power, and monitor or provide critical functions. Motion Control's products include turret aiming and stabilization products, embedded computing board level modules, electronic throttle control devices, transmission shifters, and electro-mechanical actuation control components. Surface Technologies include shot peening, laser peening, and coatings services that enhance the durability, extend the life, and prevent premature fatigue and failure on customer-supplied metal components.

18. CONTINGENCIES AND COMMITMENTS

Legal Proceedings

The Corporation has been named in a number of lawsuits that allege injury from exposure to asbestos. To date, the Corporation has not been found liable for or paid any material sum of money in settlement in any asbestos-related case. The Corporation believes its minimal use of asbestos in its past operations and the relatively non-friable condition of asbestos in its products make it unlikely that it will face material liability in any asbestos litigation, whether individually or in the aggregate. The Corporation maintains insurance coverage for these potential liabilities and believes adequate coverage exists to cover any unanticipated asbestos liability.

In December 2013, the Corporation, along with other unaffiliated parties, received a claim from Canadian Natural Resources Limited (CNRL) filed in the Court of Queen's Bench of Alberta, Judicial District of Calgary. The claim pertains to a January 2011 fire and explosion at a delayed coker unit at its Fort McMurray refinery that resulted in the injury of five CNRL employees, damage to property and equipment, and various forms of consequential loss such as loss of profit, lost opportunities, and business interruption. The fire and explosion occurred when a CNRL employee bypassed certain safety controls and opened an operating coker unit. In November 2019, all parties participated in a formal mediation and agreed to settle the claim for approximately \$38 million. The Corporation's portion of the settlement amount was \$6 million, which was fully paid in

2020 by the Corporation's primary and excess insurance coverage. No admission of liability was made by the Corporation as part of the settlement agreement. The Corporation does not expect to incur any additional liabilities related to this claim.

The Corporation is party to a number of other legal actions and claims, none of which individually or in the aggregate, in the opinion of management, are expected to have a material effect on the Corporation's results of operations or financial position.

Letters of Credit and Other Arrangements

The Corporation enters into standby letters of credit agreements and guarantees with financial institutions and customers primarily relating to guarantees of repayment, future performance on certain contracts to provide products and services, and to secure advance payments from certain international customers. As of December 31, 2019 and 2018, there were \$32.6 million and \$21.7 million of stand-by letters of credit outstanding, respectively, and \$10.8 million and \$11.7 million of bank guarantees outstanding, respectively.

The Corporation, through its Electro-Mechanical Division (EMD) business unit, has three Pennsylvania Department of Environmental Protection (PADEP) radioactive materials licenses that are utilized in the continued operation of the EMD business. In connection with these licenses, the Corporation has known conditional asset retirement obligations related to asset decommissioning activities to be performed in the future, when the Corporation terminates these licenses. For two of the three licenses, the Corporation has recorded an asset retirement obligation of approximately \$7.5 million. For its third license, the Corporation has not recorded an asset retirement obligation as it is not reasonably estimable due to insufficient information about the timing and method of settlement of the obligation. Accordingly, this obligation has not been recorded in the Consolidated Financial Statements. A liability for this obligation will be recorded in the period when sufficient information regarding timing and method of settlement becomes available to make a reasonable estimate of the liability's fair value. The Corporation is required to provide the Nuclear Regulatory Commission financial assurance demonstrating its ability to cover the cost of decommissioning its Cheswick, Pennsylvania facility upon closure, though the Corporation does not intend to close this facility. The Corporation has provided this financial assurance in the form of a \$45.6 million surety bond.

AP1000 Program

Within the Corporation's Power segment, EMD is the RCP supplier for the WEC AP1000 nuclear power plants under construction in China and the United States. The terms of the AP1000 China and U.S. contracts include liquidated damage provisions for failure to meet contractual delivery dates if the Corporation caused the delay and the delay was not excusable. The Corporation would be liable for liquidated damages if the Corporation was deemed responsible for not meeting the delivery dates. On October 10, 2013, the Corporation received a letter from WEC stating entitlements to the maximum amount of liquidated damages allowable under the AP1000 China contract from WEC of approximately \$25 million. As of December 31, 2019, the Corporation has not met certain contractual delivery dates under its AP1000 U.S. and China contracts; however, there are significant counterclaims and uncertainties as to which parties are responsible for the delays. The Corporation believes it has adequate legal defenses and intends to vigorously defend this matter. Given the uncertainties surrounding the responsibility for the delays, no accrual has been made for this matter as of December 31, 2019. As of December 31, 2019, the range of possible loss is \$0 million to \$31 million for the AP1000 U.S. contract, for a total range of possible loss of \$0 to \$55.5 million.

19. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The total cumulative balance of each component of accumulated other comprehensive income (loss), net of tax, is as follows:

<i>(In thousands)</i>	Foreign currency translation adjustments, net	Total pension and postretirement adjustments, net	Accumulated other comprehensive income (loss)
December 31, 2017	\$ (94,708)	\$ (122,132)	\$ (216,840)
Other comprehensive loss before reclassifications ⁽¹⁾	(52,440)	(31,380)	(83,820)
Amounts reclassified from accumulated other comprehensive income ⁽¹⁾	—	12,213	12,213
Net current period other comprehensive loss	(52,440)	(19,167)	(71,607)
December 31, 2018	\$ (147,148)	\$ (141,299)	\$ (288,447)
Other comprehensive loss before reclassifications ⁽¹⁾	18,447	(35,212)	(16,765)
Amounts reclassified from accumulated other comprehensive income ⁽¹⁾	—	6,195	6,195
Net current period other comprehensive income (loss)	18,447	(29,017)	(10,570)
Cumulative effect from adoption of ASU 2018-02 ⁽²⁾	\$ (1,318)	\$ (24,939)	\$ (26,257)
December 31, 2019	\$ (130,019)	\$ (195,255)	\$ (325,274)

⁽¹⁾ All amounts are after tax.

⁽²⁾ Reclassification to retained earnings due to adoption of ASU No. 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*. See Note 1 for additional information.

Details of amounts reclassified from accumulated other comprehensive income (loss) are below:

<i>(In thousands)</i>	Amount reclassified from Accumulated other comprehensive income (loss)		Affected line item in the statement where net earnings is presented
	2019	2018	
Defined benefit pension and postretirement plans			
Amortization of prior service costs	939	908	(1)
Amortization of net actuarial losses	(9,112)	(16,736)	(1)
Settlements	—	(337)	(1)
	(8,173)	(16,165)	Total before tax
	1,978	3,952	Income tax effect
Total reclassifications	\$ (6,195)	\$ (12,213)	Net of tax

⁽¹⁾ These items are included in the computation of net periodic pension cost. See Note 16, Pension and Other Postretirement Benefit Plans.

20. QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)

The following tables set forth selected unaudited quarterly Consolidated Statements of Earnings information for the fiscal years ended December 31, 2019 and 2018.

(In thousands, except per share data)

	First	Second	Third	Fourth
2019				
Net sales	\$ 578,314	\$ 638,996	\$ 614,880	\$ 655,771
Gross profit	196,873	230,044	226,076	245,752
Net earnings	55,593	80,072	82,510	89,408
Net earnings per share				
Basic earnings per share	\$ 1.30	\$ 1.87	\$ 1.93	\$ 2.09
Diluted earnings per share	\$ 1.29	\$ 1.86	\$ 1.92	\$ 2.08
2018				
Net sales	\$ 547,522	\$ 620,298	\$ 595,393	\$ 648,622
Gross profit	181,191	226,500	222,518	241,052
Net earnings	43,643	74,788	74,483	82,835
Net earnings per share				
Basic earnings per share	\$ 0.99	\$ 1.69	\$ 1.70	\$ 1.91
Diluted earnings per share	\$ 0.98	\$ 1.68	\$ 1.68	\$ 1.89

Note: Certain amounts may not add due to rounding.

21. SUBSEQUENT EVENTS

On January 8, 2020, the Corporation made a voluntary \$150 million contribution to the CW Pension Plan

On February 26, 2020, the Corporation signed a definitive agreement to acquire Dyna-Flo Control Valve Services Ltd. (Dyna-Flo) for CAD\$81 million (approximately \$61 million). Dyna-Flo, which specializes in control valves, actuators, and control systems for the chemical, petrochemical, and oil and gas markets, generated sales of approximately \$25 million for the year ended December 31, 2019. The acquired business will operate within the Commercial/Industrial segment.

Report of the Corporation

The Consolidated Financial Statements appearing in Item 8 of this Annual Report on Form 10-K have been prepared by the Corporation in conformity with accounting principles generally accepted in the United States of America. The financial statements necessarily include some amounts that are based on the best estimates and judgments of the Corporation. Other financial information in this Annual Report on Form 10-K is consistent with that in the Consolidated Financial Statements.

The Corporation maintains accounting systems, procedures, and internal accounting controls designed to provide reasonable assurance that assets are safeguarded and that transactions are executed in accordance with the appropriate corporate authorization and are properly recorded. The accounting systems and internal accounting controls are augmented by written policies and procedures, organizational structure providing for a division of responsibilities, selection and training of qualified personnel, and an internal audit program. The design, monitoring, and revision of internal accounting control systems involve, among other things, management's judgment with respect to the relative cost and expected benefits of specific control measures. Management of the Corporation has completed an assessment of the Corporation's internal controls over financial reporting and has included "Management's Annual Report on Internal Control Over Financial Reporting" in Item 9A of this Annual Report on Form 10-K.

Deloitte & Touche LLP, our independent registered public accounting firm, performed an integrated audit of the Corporation's Consolidated Financial Statements that also included forming an opinion on the internal controls over financial reporting of the Corporation for the year ended December 31, 2019. An audit includes examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. The objective of their audit is the expression of an opinion on the Corporation's Consolidated Financial Statements in conformity with accounting principles generally accepted in the United States of America, in all material respects, and on the internal controls over financial reporting as of December 31, 2019.

The Audit Committee of the Board of Directors, composed entirely of directors who are independent of the Corporation, appoints the independent registered public accounting firm for ratification by stockholders and, among other things, considers the scope of the independent registered public accounting firm's examination, the audit results, and the adequacy of internal accounting controls of the Corporation. The independent registered public accounting firm and the internal auditor have direct access to the Audit Committee, and they meet with the committee from time to time, with and without management present, to discuss accounting, auditing, non-audit consulting services, internal control, and financial reporting matters.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Curtiss-Wright Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Curtiss-Wright Corporation and subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of earnings, comprehensive income, cash flows, and stockholders' equity, for each of the three years in the period ended December 31, 2019, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also 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 (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 27, 2020, expressed an unqualified opinion on the Company's internal control over financial reporting.

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 Matter

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

Revenue –Over-Time Basis – Refer to Note 2 to the financial statements

Critical Audit Matter Description

The Company recognizes revenue when control of a promised good and/or service is transferred to a customer. The Company identifies a performance obligation for each promise in a contract to transfer a distinct good or service to the customer. Contracts that qualify for over-time revenue recognition are generally associated with the design, development, and manufacture of highly engineered industrial products used in commercial and defense applications and generally span between 2-5 years in duration. The Company uses over-time revenue recognition based on the utilization of an input measure used to measure progress of performance obligations, such as costs incurred to date relative to total estimated costs.

Application of an over-time revenue recognition method requires the use of reasonable and dependable estimates of costs that will be incurred to complete production of goods or provision of services. As of December 31, 2019, revenue was \$2.488 billion, of which 49% relates to over-time revenue.

Certain of the Company's contracts have limited amount of historical data available requiring the Company to make judgments to estimate future costs that will be incurred for these contracts. Related to these contracts, auditing these estimates required

both extensive audit effort due to a high degree of auditor judgment, especially given the limited historical data for certain contracts, when performing audit procedures and evaluating the results of those procedures.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management's estimates of total costs that will be incurred for certain of the contracts (as discussed above) included the following:

- We tested the effectiveness of controls over the long-term contract revenue, including those over the estimates of total costs for the performance obligation.
- We performed the following:
 - Evaluated the appropriateness and consistency of the methods and assumptions used by management to develop the estimates of future costs that will be incurred for contracts with limited historical experience.
 - Evaluated management's ability to achieve the estimates of costs that will be incurred by performing corroborating inquiries with the Company's project managers and engineers, and comparing the estimates to management's work plans, engineering specifications, and supplier contracts.
 - Tested the accuracy and completeness of the costs incurred to date.
 - Compared the actual costs incurred to date to management's estimated costs to be incurred to date.
 - Due to the limited historical data available for certain contracts, we tested changes in management's total cost estimates.
 - Tested the mathematical accuracy of management's estimates of future costs to be incurred.
 - Tested the mathematical accuracy of management's calculation of revenue for the contract.

/s/ Deloitte & Touche LLP

Parsippany, New Jersey
February 27, 2020

We have served as the Company's auditor since 2003.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Curtiss-Wright Corporation

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Curtiss-Wright Corporation and subsidiaries (the “Company”) as of December 31, 2019, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2019, of the Company and our report dated February 27, 2020, expressed an unqualified opinion on those financial statements.

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 Annual 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/ Deloitte & Touche LLP

Parsippany, New Jersey
February 27, 2020

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

As of December 31, 2019, the Corporation's management, including the Corporation's Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the Corporation's disclosure controls and procedures, as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based on such evaluation, the Corporation's Chief Executive Officer and Chief Financial Officer concluded that the Corporation's disclosure controls and procedures are effective as of December 31, 2019 insofar as they are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, and they include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report On Internal Control Over Financial Reporting

The Corporation's management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended.

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

The Corporation's management assessed the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2019. In making this assessment, the Corporation's management used the criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on management's assessment, management believes that as of December 31, 2019, the Corporation's internal control over financial reporting is effective based on the established criteria.

The Corporation's internal controls over financial reporting as of December 31, 2019 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, and their report thereon is included in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

The information required by Items 10, 11, 12, 13, and 14 of Part III of this Annual Report on Form 10-K, to the extent not set forth herein, is incorporated herein by reference from the registrant's definitive proxy statement relating to the annual meeting of stockholders to be held on May 7, 2020 which definitive proxy statement shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates. Information required by Item 401(b) of Regulation S-K is included in Part I of this report under the caption "Executive Officers" and information required by Item 201(d) of Regulation S-K is included in Part II of this report under the caption "Securities Authorized For Issuance Under Equity Compensation Plans."

PART IV

Item 15. Exhibits, Financial Statement Schedule.

(a)	Financial Statements and Footnotes	Page
1.	The following are documents filed as part of this report in Part II, Item 8:	
	Consolidated Statements of Earnings	37
	Consolidated Statements of Comprehensive Income	38
	Consolidated Balance Sheets	39
	Consolidated Statements of Cash Flows	40
	Consolidated Statements of Stockholders' Equity	41
	Notes to Consolidated Financial Statements	42
2.	Financial Statement Schedule	
	Schedule II-Valuation and Qualifying Accounts	82
	All other financial statement schedules have been omitted because they are either not required, not applicable or the required information is shown in the Consolidated Financial Statements or Notes thereto.	

(b)		Exhibits		Filed
Exhibit No.	Exhibit Description	Incorporated by Reference		Herewith
		Form	Filing Date	
2.1	Agreement and Plan of Merger and Recapitalization, dated as of February 1, 2005, by and between the Registrant and CW Merger Sub, Inc.	8-K	February 3, 2005	
3.1	Amended and Restated Certificate of Incorporation	8-A12B/A	May 24, 2005	
3.2	Amended and Restated By-Laws	8-K	May 18, 2015	
4.1	Form of stock certificate for Common Stock	8-A12B/A	May 24, 2005	
4.2	Description of Registrant's Securities	DEF 14A	May 24, 2005	
10.1	Curtiss-Wright Corporation 2005 Omnibus Long-Term Incentive Plan, amended and restated effective January 1, 2010*	14A	March 19, 2010	
10.2	Form of Long Term Incentive Award Agreement, between the Registrant and the executive officers of the Registrant*	10-K	March 7, 2006	
10.3	Revised Standard Employment Severance Agreement with Senior Management of the Registrant*	10-Q	August 15, 2001	
10.4	Amended and Restated Retirement Benefits Restoration Plan as amended January 1, 2009.*	10-K	February 25, 2011	
10.5	Instrument of Amendment No. 1 to Amended and Restated Retirement Benefits Restoration Plan as amended January 1, 2009*	10-K	February 24, 2012	
10.6	Instrument of Amendment No. 2 to Amended and Restated Retirement Benefits Restoration Plan as amended January 1, 2009*	10-K	February 19, 2015	

10.7	<u>Instrument of Amendment No. 3 to Amended and Restated Retirement Benefits Restoration Plan as amended January 1, 2009*</u>	10-K	February 19, 2015	
10.8	<u>Instrument of Amendment No. 4 to Amended and Restated Retirement Benefits Restoration Plan as amended January 1, 2009*</u>	10-K	February 25, 2016	
10.9	<u>Curtiss-Wright Corporation Retirement Plan, as Amended and Restated January 1, 2015*</u>	10-K	February 25, 2016	
10.10	<u>Instrument of Amendment No. 1 to Curtiss-Wright Corporation Retirement Plan, as Amended and Restated January 1, 2015*</u>	10-K	February 21, 2017	
10.11	<u>Instrument of Amendment No. 2 to Curtiss-Wright Corporation Retirement Plan, as Amended and Restated January 1, 2015*</u>	10-K	February 21, 2017	
10.12	<u>Instrument of Amendment No. 3 to Curtiss-Wright Corporation Retirement Plan, as Amended and Restated January 1, 2015*</u>	10-K	February 22, 2018	
10.13	<u>Instrument of Amendment No. 4 to Curtiss-Wright Corporation Retirement Plan, as Amended and Restated January 1, 2015*</u>	10-K	February 22, 2018	
10.14	<u>Instrument of Amendment No. 5 to Curtiss-Wright Corporation Retirement Plan, as Amended and Restated January 1, 2015*</u>	10-K	February 27, 2019	
10.15	<u>Instrument of Amendment No. 6 to Curtiss-Wright Corporation Retirement Plan, as Amended and Restated January 1, 2015*</u>	10-K	February 27, 2019	
10.16	<u>Instrument of Amendment No. 7 to Curtiss-Wright Corporation Retirement Plan, as Amended and Restated January 1, 2015*</u>			X
10.17	<u>Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective as of January 1, 2015*</u>	10-K	February 25, 2016	
10.18	<u>Instrument of Amendment No. 1 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 25, 2016	
10.19	<u>Instrument of Amendment No. 2 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 21, 2017	
10.20	<u>Instrument of Amendment No. 3 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 21, 2017	
10.21	<u>Instrument of Amendment No. 4 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 21, 2017	
10.22	<u>Instrument of Amendment No. 5 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 22, 2018	
10.23	<u>Instrument of Amendment No. 6 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 22, 2018	
10.24	<u>Instrument of Amendment No. 7 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 27, 2019	
10.25	<u>Instrument of Amendment No. 8 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 27, 2019	
10.26	<u>Instrument of Amendment No. 9 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-K	February 27, 2019	

10.27	<u>Instrument of Amendment No. 10 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-Q	August 1, 2019	
10.28	<u>Instrument of Amendment No. 11 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>	10-Q	August 1, 2019	
10.29	<u>Instrument of Amendment No. 12 to the Curtiss-Wright Corporation Savings and Investment Plan, as Amended and Restated effective January 1, 2015*</u>			X
10.30	<u>Curtiss-Wright Corporation 2014 Omnibus Incentive Plan*</u>	14A	March 21, 2014	
10.31	<u>Curtiss-Wright Corporation Retirement Savings Restoration Plan*</u>	10-K	February 19, 2015	
10.32	<u>Instrument of Amendment No. 1 to the Curtiss-Wright Corporation Retirement Savings Restoration Plan*</u>	10-K	February 25, 2016	
10.33	<u>Form of indemnification Agreement entered into by the Registrant with each of its directors</u>	10-Q	May 7, 2012	
10.34	<u>Amended and Restated Curtiss-Wright Electro-Mechanical Corporation Savings Plan, dated January 1, 2010*</u>	10-K	February 25, 2011	
10.35	<u>Instrument of Amendment No.1 to the Amended and Restated Curtiss-Wright Electro-Mechanical Corporation Savings Plan, dated January 1, 2010*</u>	10-K	February 24, 2012	
10.36	<u>Instrument of Amendment No. 2 to the Amended and Restated Curtiss-Wright Electro-Mechanical Corporation Savings Plan, dated January 1, 2010*</u>	10-K	February 21, 2013	
10.37	<u>Instrument of Amendment No.3 to the Amended and Restated Curtiss-Wright Electro-Mechanical Corporation Savings Plan, dated January 1, 2010*</u>	10-K	February 21, 2013	
10.38	<u>Instrument of Amendment No.4 to the Amended and Restated Curtiss-Wright Electro-Mechanical Corporation Savings Plan, dated January 1, 2010*</u>	10-K	February 21, 2014	
10.39	<u>Curtiss-Wright Corporation 2005 Stock Plan for Non-Employee Directors*</u>	14A	April 5, 2005	
10.40	<u>Amended and Revised Curtiss-Wright Corporation Executive Deferred Compensation Plan, as amended November 2006*</u>	10-K	February 27, 2007	
10.41	<u>Instrument of Amendment No. 1 to the Amended and Revised Curtiss-Wright Corporation Executive Deferred Compensation Plan, as amended August 29, 2008*</u>	10-K	February 24, 2012	
10.42	<u>Instrument of Amendment No. 2 to the Amended and Revised Curtiss-Wright Corporation Executive Deferred Compensation Plan, as amended August 29, 2008*</u>	10-K	February 19, 2015	
10.43	<u>Instrument of Amendment No. 3 to the Amended and Revised Curtiss-Wright Corporation Executive Deferred Compensation Plan, as amended August 29, 2008*</u>	10-K	February 25, 2016	
10.44	<u>Standard Change In Control Severance Protection Agreement, dated July 9, 2001, between the Registrant and Key Executives of the Registrant*</u>	10-Q	November 15, 2001	
10.45	<u>Curtiss-Wright Corporation Employee Stock Purchase Plan, as amended May 10, 2018*</u>	14A	March 23, 2018	
10.46	<u>Incentive Compensation Plan, as amended November 15, 2010 *</u>	14A	March 24, 2011	
10.47	<u>Restricted Stock Unit Agreement, dated April 1, 2013, by and between the Registrant and Thomas Quinly *</u>	10-Q	May 2, 2013	

10.48	Trust Agreement, dated January 20, 1998, between the Registrant and PNC Bank, National Association	10-Q	May 13, 1998	
10.49	Note Purchase Agreement between the Registrant and certain Institutional Investors, dated December 8, 2011	8-K	December 13, 2011	
10.50	Restrictive Legends on Notes subject to Note Purchase Agreement between the Registrant and certain Institutional Investors, dated December 8, 2011	8-K	December 13, 2011	
10.51	Note Purchase Agreement between the Registrant and certain Institutional Investors, dated February 26, 2013	8-K	February 27, 2013	
10.52	Restrictive Legends on Notes subject to Note Purchase Agreement between the Registrant and certain Institutional Investors, dated February 26, 2013	8-K	February 27, 2013	
10.53	Fourth Amended and Restated Credit Agreement dated as of October 17, 2018 among the Company and Certain Subsidiaries as Borrowers; the Lenders party thereto; Bank of America N.A., as Administrative Agent, Swingline Lender, and L/C Issuer; Merrill Lynch, Pierce, Fenner & Smith Incorporated, JPMorgan Chase Bank, N.A., and Wells Fargo Securities, LLC, as Joint Lead Arrangers and Joint Bookrunners; JPMorgan Chase Bank, N.A., and Wells Fargo, N.A., as Syndication Agents; and Citizens Bank, N.A., as Documentation Agents	8-K	October 17, 2018	
21.00	Subsidiaries of the Registrant			X
23.00	Consent of Independent Registered Public Accounting Firm of Independent Registered Public Accounting Firm			X
31.10	Certification of David C. Adams, Chairman and CEO, Pursuant to Rule 13a - 14(a)			X
31.20	Certification of Glenn E. Tynan, Chief Financial Officer, Pursuant to Rule 13a - 14(a)			X
32.00	Certification of David C. Adams, Chairman and CEO and Glenn E. Tynan, Chief Financial Officer, Pursuant to 18 U.S.C. Section 1350			X

* Indicates contract or compensatory plan or arrangement

101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

CURTISS-WRIGHT CORPORATION and SUBSIDIARIES
SCHEDULE II – VALUATION and QUALIFYING ACCOUNTS
for the years ended December 31, 2019, 2018, and 2017
(In thousands)

Description	Balance at Beginning of Period	Additions		Deductions	Balance at End of Period
		Charged to Costs and Expenses	Charged to Other Accounts		
Deducted from assets to which they apply:					
December 31, 2019					
Tax valuation allowance	11,646	1,305	(22) ⁽¹⁾	9,543 ⁽²⁾	3,386
Total	\$ 11,646	\$ 1,305	\$ (22)	\$ 9,543	\$ 3,386
December 31, 2018					
Tax valuation allowance	12,322	108	17 ⁽¹⁾	801	11,646
Total	\$ 12,322	\$ 108	\$ 17	\$ 801	\$ 11,646
December 31, 2017					
Tax valuation allowance	17,776	1,471	125 ⁽¹⁾	7,050 ⁽³⁾	12,322
Total	\$ 17,776	\$ 1,471	\$ 125	\$ 7,050	\$ 12,322

⁽¹⁾ Primarily foreign currency translation adjustments.

⁽²⁾ \$5.7 million relates to the capital loss carryforward expiration from the sale of the Downstream oil and gas business.

⁽³⁾ \$4.3 million relates to the reduction of the U.S. corporate income tax rate due to the Tax Act.

SIGNATURES

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

CURTISS-WRIGHT CORPORATION
(Registrant)

Date: February 27, 2020 By: /s/ David C. Adams
David C. Adams
Chairman and Chief Executive Officer

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

Date: February 27, 2020 By: /s/ Glenn E. Tynan
Glenn E. Tynan
Vice President and Chief Financial Officer

Date: February 27, 2020 By: /s/ K. Christopher Farkas
K. Christopher Farkas
Vice President of Finance and Corporate Controller

Date: February 27, 2020 By: /s/ David C. Adams
David C. Adams
Director

Date: February 27, 2020 By: /s/ Dean M. Flatt
Dean M. Flatt
Director

Date: February 27, 2020 By: /s/ S. Marce Fuller
S. Marce Fuller
Director

Date: February 27, 2020 By: /s/ Bruce D. Hoechner
Bruce D. Hoechner
Director

Date: February 27, 2020 By: /s/ Glenda J. Minor
Glenda J. Minor
Director

Date: February 27, 2020 By: /s/ John B. Nathman
John B. Nathman
Director

Date: February 27, 2020 By: /s/ Robert J. Rivet
Robert J. Rivet
Director

Date: February 27, 2020 By: /s/ Albert E. Smith
Albert E. Smith
Director

Date: February 27, 2020 By: /s/ Peter C. Wallace
Peter C. Wallace
Director

**CURTISS-WRIGHT CORPORATION
RETIREMENT PLAN
As Amended and Restated effective January 1, 2015
SEVENTH INSTRUMENT OF AMENDMENT**

Recitals:

1. Curtiss-Wright Corporation (the “Company”) has heretofore adopted the Curtiss-Wright Corporation Retirement Plan (the “Plan”) and has caused the Plan to be amended and restated in its entirety effective as of January 1, 2015.
 2. The Plan consists of four separate components:
 - a. The EMD Component, which applies to eligible employees of Curtiss-Wright Electro-Mechanical Corporation as provided in the EMD appendix to the Plan (the “EMD Component”);
 - b. The CWC Component, which applies to other employees of the Company eligible to participate in the Plan (the “CWC Component”);
 - c. The Williams Salaried Plan Component, which applies to eligible employees of Williams Controls, Inc. as provided in the plan document for the plan formerly known as the Williams Controls, Inc. Retirement Plan prior to the Plan’s merger with it, effective as of December 31, 2014; and
 - d. The Williams Union Plan Component, which applies to eligible employees of Williams Controls, Inc. as provided in the plan document for the plan formerly known as the Williams Controls, Inc. U.A.W. Local 492 Pension Agreement prior to its merger with the plan formerly known as the Williams Controls, Inc. Retirement Plan, effective as of December 31, 2014 (the “Williams Union Plan Component”).
 3. Subsequent to the most recent amendment and restatement of the Plan, the Company has decided to amend the CWC Component for the following reasons:
 - a. To reflect the terms of a new collective bargaining agreement covering employees of the Company’s Addison operations that (i) increases their benefit formula with respect to credited service earned on or after January 1, 2021, and (ii) provides for the cessation of benefit accruals after December 31, 2028; and
 - b. To reflect the terms of a new collective bargaining agreement covering employees of the Company’s Lynwood operations that provides for the cessation of benefit accruals after December 31, 2028.
 4. Subsequent to the most recent amendment and restatement of the Plan, the Company has decided to amend the EMD Component to reflect the terms of new collective bargaining agreements covering certain employees of Curtiss-Wright Electro-Mechanical Corporation that provides for the cessation of benefit accruals after December 31, 2028.
 5. Articles 12.01 and 12.02 of the CWC Component permit the Company to amend the CWC Component, by written resolution, at any time and from time to time.
-

6. Article 11.02(b) of the CWC Component authorizes the Curtiss-Wright Corporation Administrative Committee to adopt certain CWC Component amendments on behalf of the Company.
7. Article 11.02(b) of the CWC Component and Section 12.B.2 of the EMD Component authorize the Curtiss-Wright Corporation Administrative Committee to adopt certain Plan amendments on behalf of the Company.

Amendment:

For the reasons set forth in the Recitals to this Instrument of Amendment, the CWC and EMD Components of the Plan are hereby amended in the following respects:

CWC Component

The CWC Component is amended as follows:

1. Effective January 1, 2021, Article 9.02(a)(viii) ("Metal Improvement Company, LLC – Addison Division") is amended by adding the following subparagraph (I) at the end thereof, to read as follows:

(I) With benefits commencing on or after January 1, 2021, \$23.00 multiplied by his years of Credited Service on or after January 1, 2021, for any pension payments due for months commencing on or after January 1, 2021.

In no event shall any years of Credited Service be credited for purposes of this paragraph (a)(viii) for any period of employment on or after January 1, 2029.

2. Effective July 1, 2019, Article 9.02(a)(xi) ("Metal Improvement Company, LLC – Lynwood Division") is amended by adding the following paragraph at the end thereof, to read as follows:

In no event shall any years of Credited Service be credited for purposes of this paragraph (a)(xi) for any period of employment on or after January 1, 2029.

EMD Component

Effective August 17, 2019, the EMD Component is amended as follows:

Section 4.A.1(c) is amended in its entirety, to read as follows:

- (c) For each year of Credited Service after December 31, 1994, and on or before December 31, 2028, for an Employee who has an election to contribute in effect for a Plan Year, the Employee's monthly accumulated pension under the Career Accumulation method shall be the sum of 1/12 of 2% of Compensation for that Plan Year; provided, however, that in no event shall such an Employee's monthly accumulated pension under the Career Accumulation method for a Plan Year be less than \$31.00 multiplied by the Participant's Credited Service for such Plan Year. An Employee's monthly accumulated pension for a year under the Career Accumulation method shall be zero, if the Employee has elected to waive his right to contribute for such year, except as provided in Sections 3.E and 4.E. In no event shall any years of Credited Service be credited for purposes of this paragraph (c) for any period of employment on or after January 1, 2029.
-

Except to the extent amended by this Instrument of Amendment, the Plan shall remain in full force and effect.

IN WITNESS WHEREOF, this amendment has been executed on this ____ day of _____, 2019.

**Curtiss-Wright Corporation
Administrative Committee**

By: _____
Christopher J. McMahon

**CURTISS-WRIGHT CORPORATION
SAVINGS AND INVESTMENT PLAN
As Amended and Restated effective January 1, 2015
TWELFTH INSTRUMENT OF AMENDMENT**

Recitals:

1. Curtiss-Wright Corporation (the "Company") has heretofore adopted the Curtiss-Wright Corporation Savings and Investment Plan (the "Plan") and has caused the Plan to be amended and restated in its entirety effective as of January 1, 2015.
2. Subsequent to the most recent amendment and restatement of the Plan, the Company has decided to amend the Plan for the following reasons:
 - a. To reflect the terms of a new collective bargaining agreement covering Employees of the Company's Engineered Pump Division that increases the Matching Contribution formula, effective August 17, 2019; and
 - b. To increase the eligibility for making in-plan Roth rollovers.
3. Section 12.01(a) of the Plan permits the Company to amend the Plan at any time and from time to time.
4. Section 12.01(b) authorizes the Curtiss-Wright Corporation Administrative Committee to adopt Plan amendments on behalf of the Company under certain circumstances.
5. Certain of the Plan amendments described herein shall be subject to approval by the Board of Directors.

Amendments to the Plan:

1. Effective August 17, 2019, Section 3.07(d) is amended in its entirety to read as follows:

(d) From and after August 17, 2019, the Employer shall contribute on behalf of each of its Frozen Members, other than a member of a unit of Employees covered by a collective bargaining agreement, with the exception of (i) the collective bargaining agreement covering Employees of Williams Controls, Inc., (ii) a collective bargaining agreement covering Employees of the Employer that had adopted the EMS Plan, and (iii) the collective bargaining agreement covering Employees of the Target Rock operations of Curtiss-Wright Flow Control Corporation, and Acquired Members who elected to make Deferred Cash Contributions, Roth Deferred Cash Contributions, and/or After-Tax Contributions, Matching Contributions in an amount equal to 50% of the Deferred Cash Contributions, Roth Deferred Cash Contributions, and/or After-Tax Contributions made by the Member to the Plan that do not exceed the first 8% (6% in the case of Employees described in subparagraph (i) above) of the Member's Compensation during each payroll period. In no event shall the amount of Matching Contributions made under this Section 3.07(d) equal more than 4% (3% in the case of Employees described in subparagraph (i) above) of a Member's Compensation for the payroll period. Matching Contributions shall

first be made with respect to Deferred Cash Contributions, and Roth Deferred Cash Contributions, then with respect to After-Tax Contributions.

2. Effective December 1, 2019, the last paragraph of Section 3.08 is amended in its entirety to read as follows:

Effective December 1, 2019, a Member who is then an Employee may elect to transfer any amount from one or more of his Accounts to his Roth Deferred Cash Contribution Account (an “in-plan Roth rollover”), without regard to whether such amount (1) is otherwise eligible for distribution from the Plan or (2) qualifies as an eligible rollover distribution pursuant to Section 402(c)(4) of the Code, provided that such transfer is not made from the Member’s Roth Deferred Cash Contribution Account. Any such in-plan Roth rollover shall be made in accordance with, and treated as a taxable distribution to the extent required by, Section 402A(c)(4) of the Code and any regulations and other guidance issued under that provision.

Except to the extent amended by this Instrument of Amendment, the Plan shall remain in full force and effect.

IN WITNESS WHEREOF, this amendment has been executed on this day of , 2019.

Curtiss-Wright Corporation
Administrative Committee

By: _____
Christopher J. McMahon

Subsidiaries of the Registrant

The information below is provided as of December 31, 2019 with respect to the subsidiaries of the Registrant, all of which are wholly owned by the Corporation, directly or indirectly. The names of certain inactive subsidiaries and other consolidated subsidiaries of the Registrant have been omitted because such subsidiaries would not constitute a significant subsidiary, individually or in the aggregate.

Name	Organized Under the Laws of
Curtiss Wright Controls Inc.	Delaware
Curtiss-Wright Electro-Mechanical Corporation	Delaware
Curtiss-Wright Flow Control Corporation	New York
Dy4 Systems, Inc. (DY4 Canada)	Ontario
Metal Improvement Company, LLC	Delaware

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-116195, 333-126541, 333-126543, 333-177739, 333-197752, and 333-226351 on Form S-8 of our reports relating to the consolidated financial statements and financial statement schedule of Curtiss-Wright Corporation and subsidiaries, and the effectiveness of Curtiss-Wright Corporation's internal control over financial reporting dated February 27, 2020, appearing in the Annual Report on Form 10-K of Curtiss-Wright Corporation for the year ended December 31, 2019.

/s/ Deloitte & Touche LLP

Parsippany, New Jersey
February 27, 2020

Certifications

I, David C. Adams, certify that:

1. I have reviewed this Annual Report on Form 10-K of Curtiss-Wright Corporation;
2. Based on my knowledge, this 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 report;
3. Based on my knowledge, the financial statements, and other financial information included in this 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 report;
4. The registrant's other certifying officer(s) 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 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 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 report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an Annual Report) 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 officer(s) 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 the 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 27, 2020

/s/ David C. Adams

David C. Adams

Chairman and Chief Executive Officer

Certifications

I, Glenn E. Tynan, certify that:

1. I have reviewed this Annual Report on Form 10-K of Curtiss-Wright Corporation;
2. Based on my knowledge, this 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 report;
3. Based on my knowledge, the financial statements, and other financial information included in this 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 report;
4. The registrant's other certifying officer(s) 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 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 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 report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an Annual Report) 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 officer(s) 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 the 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 27, 2020

/s/ Glenn E. Tynan

Glenn E. Tynan

Vice President and Chief Financial Officer

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350

In connection with the Annual Report of Curtiss-Wright Corporation (the "Company") on Form 10-K for the period ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), David C. Adams, as President and Chief Executive Officer of the Company, and Glenn E. Tynan, as Chief Financial Officer of the Company, each hereby certifies, pursuant to 18 U.S.C. section 1350, that to the best of his knowledge:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ David C. Adams

David C. Adams
Chairman and
Chief Executive Officer
February 27, 2020

/s/ Glenn E. Tynan

Glenn E. Tynan
Vice President and Chief Financial Officer
February 27, 2020