Woodward, Inc.
Form 10-K
November 13, 2018
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 September 30, 2018

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 000-08408
WOODWARD, INC.
(Exact name of registrant as specified in its charter)

Delaware	36-1984010
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1081 Woodward Way, Fort Collins, Colorado	80524
(Address of principal executive offices)	(Zip Code)

(970) 482-5811

(Registrant’s telephone number, including area code)

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 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

Aggregate market value of registrant's common stock held by non-affiliates of the registrant, based upon the closing price of a share of the registrant's common stock on March 31, 2018 as reported on The NASDAQ Global Select Market on that date: $3,168,879,941. For purposes of this calculation, shares of common stock held by (i) persons holding more than 5% of the outstanding shares of stock, (ii) officers and directors of the registrant, and (iii) the Woodward Governor Company Profit Sharing Trust, Woodward Governor Company Deferred Shares Trust, or the Woodward Charitable Trust, as of March 31, 2018, are excluded in that such persons may be deemed to be affiliates. This determination is not necessarily conclusive of affiliate status.

As of November 7, 2018, 61,781,668 shares of the registrant's common stock with a par value of $0.001455 per share were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of our proxy statement for the Annual Meeting of Stockholders to be held January 30, 2019, are incorporated by reference into Parts II and III of this Form 10-K, to the extent indicated.

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PART I

Forward Looking Statements

This Annual Report on Form 10-K, including “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” contains forward-looking statements regarding future events and our future results within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical fact are statements that are deemed forward-looking statements. These statements are based on current expectations, estimates, forecasts, and projections about the industries in which we operate and the beliefs and assumptions of management. Words such as “anticipate,” “believe,” “estimate,” “seek,” “goal,” “expect,” “forecast,” “intend,” “continue,” “o “project,” “target,” “strive,” “can,” “could,” “may,” “should,” “will,” “would,” variations of such words, and similar expressio intended to identify such forward-looking statements. In addition, any statements that refer to projections of our future financial performance, our anticipated growth and trends in our businesses, and other characteristics of future events or circumstances are forward-looking statements. Forward-looking statements may include, among others, statements relating to:

•plans and expectations related to our acquisition of L’Orange GmbH and its affiliate, Fluid Mechanics LLC, and their related operations in Germany, the United States and China;

•future sales, earnings, cash flow, uses of cash, and other measures of financial performance;

•trends in our business and the markets in which we operate, including expectations in those markets in future periods;

•our expected expenses in future periods and trends in such expenses over time;

•descriptions of our plans and expectations for future operations;

•plans and expectations relating to the performance of our joint venture with General Electric Company;

•investments in new campuses, business sites and related business developments;

•the effect of economic trends or growth;

•the expected levels of activity in particular industries or markets and the effects of changes in those levels;

•the scope, nature, or impact of acquisition activity and integration of such acquisition into our business;

•the research, development, production, and support of new products and services;

•new business opportunities;

•restructuring and alignment costs and savings;

•our plans, objectives, expectations and intentions with respect to business opportunities that may be available to us;

•our liquidity, including our ability to meet capital spending requirements and operations;

•future repurchases of common stock;

•future levels of indebtedness and capital spending;

•the stability of financial institutions, including those lending to us;

•pension and other postretirement plan assumptions and future contributions; and

•our tax rate and other effects of the changes in U.S. federal tax law.

Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties, and assumptions that are difficult to predict, including:

•a decline in our customers' business, or our business with, or financial distress of, our significant customers;

•global economic uncertainty and instability in the financial markets;

•our ability to manage product liability claims, product recalls or other liabilities associated with the products and services that we provide;

•our ability to obtain financing, on acceptable terms or at all, to implement our business plans, complete acquisitions, or otherwise take advantage of business opportunities or respond to business pressures;

•the long sales cycle, customer evaluation process, and implementation period of some of our products and services;

•our ability to implement and realize the intended effects of any restructuring and alignment efforts;

•our ability to successfully manage competitive factors, including prices, promotional incentives, competitor product development, industry consolidation, and commodity and other input cost increases;

•our ability to manage our expenses and product mix while responding to sales increases or decreases;

•the ability of our subcontractors to perform contractual obligations and our suppliers to provide us with materials of sufficient quality or quantity required to meet our production needs at favorable prices or at all;

•our ability to monitor our technological expertise and the success of, and/or costs associated with, our product development activities;

•consolidation in the aerospace market and our participation in a strategic joint venture with General Electric Company may make it more difficult to secure long-term sales in certain aerospace markets;

•our debt obligations, our debt service requirements, and our ability to operate our business, pursue business strategies and incur additional debt in light of covenants contained in our outstanding debt agreements;

•our ability to manage additional tax expense and exposures;

•risks related to our U.S. Government contracting activities, including liabilities resulting from legal and regulatory proceedings, inquiries, or investigations related to such activities;

•the potential of a significant reduction in defense sales due to decreases in the amount of U.S. Federal defense spending or other specific budget cuts impacting defense programs in which we participate;

•changes in government spending patterns, priorities, subsidy programs and/or regulatory requirements;

•future impairment charges resulting from changes in the estimates of fair value of reporting units or of long-lived assets;

•future results of our subsidiaries;

•environmental liabilities related to manufacturing activities and/or real estate acquisitions;

•our continued access to a stable workforce and favorable labor relations with our employees;

•physical and other risks related to our operations and suppliers, including natural disasters, which could disrupt production;

•our ability to successfully manage regulatory, tax, and legal matters (including the adequacy of amounts accrued for contingencies, the U.S. Foreign Corrupt Practices Act, international trade regulations, and product liability, patent, and intellectual property matters);

•changes in accounting standards that could adversely impact our profitability or financial position;

•impacts of tariff regulations;

•risks related to our common stock, including changes in prices and trading volumes;

•risks from operating internationally, including the impact on reported earnings from fluctuations in foreign currency exchange rates, tariffs, and compliance with and changes in the legal and regulatory environments of the United States and the countries in which we operate;

•risks associated with global political and economic uncertainty in the European Union and elsewhere;

•fair value of defined benefit plan assets and assumptions used in determining our retirement pension and other postretirement benefit obligations and related expenses including, among others, discount rates and investment return on pension assets;

•industry risks, including changes in commodity prices for oil, natural gas, and other minerals, unforeseen events that may reduce commercial aviation, and changing emissions standards;

•possible information systems interruptions or intrusions, which may adversely affect our operations;

•certain provisions of our charter documents and Delaware law that could discourage or prevent others from acquiring our company; and

•risks associated with integration of our acquisitions and successful completion of divestitures.

These factors are representative of the risks, uncertainties, and assumptions that could cause actual outcomes and results to differ materially from what is expressed or forecast in our forward-looking statements. Other factors are discussed under the caption "Risk Factors" in Part I, Item 1A in this Annual Report on Form 10-K for the fiscal year ended September 30, 2018 (this "Form 10-K"). We undertake no obligation to revise or update any forward-looking statements for any reason, except as required by applicable law.

Unless we have indicated otherwise or the context otherwise requires, references in this Form 10-K to "Woodward," "the Company," "we," "us," and "our" refer to Woodward, Inc. and its consolidated subsidiaries.

Except where we have otherwise indicated or the context otherwise requires, amounts presented in this Form 10-K are in thousands, except per share amounts.

Item 1. Business

General

Woodward enhances the global quality of life, creating innovative energy control solutions that optimize the performance, efficiency and emissions of our customers' products. We are an independent designer, manufacturer, and service provider of energy control and optimization solutions. We design, produce and service reliable, efficient, low-emission, and high-performance energy control products for diverse applications in challenging environments. We have production and assembly facilities in the United States, Europe and Asia, and promote our products and services through our worldwide locations.

Our strategic focus is providing energy control and optimization solutions for the aerospace and industrial markets. The precise and efficient control of energy, including motion, fluid, combustion and electrical energy, is a growing requirement in the markets we serve. Our customers look to us to optimize the efficiency, emissions and operation of power equipment in both commercial and defense operations. Our core technologies leverage well across our markets and customer applications, enabling us to develop and integrate cost-effective and state-of-the-art fuel, combustion, fluid, actuation and electronic systems. We focus primarily on serving original equipment manufacturers ("OEMs") and equipment packagers, partnering with them to bring superior component and system solutions to their demanding applications. We also provide aftermarket repair, maintenance, replacement and other service support for our installed products.

Our components and integrated systems optimize performance of commercial aircraft, defense aircraft, military ground vehicles and other equipment, gas and steam turbines, wind turbines, including converters and power grid related equipment, industrial diesel, gas, bio-diesel and dual fuel reciprocating engines, and electrical power systems. Our innovative motion, fluid, combustion, and electrical energy control systems help our customers offer more cost-effective, cleaner, and more reliable equipment.

Woodward was established in 1870, incorporated in 1902, and is headquartered in Fort Collins, Colorado. The mailing address of our world headquarters is 1081 Woodward Way, Fort Collins, Colorado 80524. Our telephone number at that location is (970) 482-5811, and our website is www.woodward.com. None of the information contained on our website is incorporated into this document by reference.

L'Orange Acquisition

On April 8, 2018, we entered into a Share Purchase Agreement (the "L'Orange Agreement") with MTU Friedrichshafen GmbH ("MTU") and MTU America Inc. (together with MTU, the "Sellers"), both of which were subsidiaries of Rolls-Royce PLC ("Rolls-Royce"). Pursuant to the L'Orange Agreement, we agreed to acquire all of the outstanding shares of stock of L'Orange GmbH, together with its wholly-owned subsidiaries in China and Germany, as well as all of the outstanding equity interests of its affiliate, Fluid Mechanics LLC, and their related operations (collectively, "L'Orange"), for total consideration (including cash consideration and the assumption of certain liabilities) of €700,000, or approximately $811,000 (the "L'Orange Acquisition"). The L'Orange Acquisition closed on June 1, 2018 (the "Closing") and L'Orange became a wholly-owned subsidiary of the Company. L'Orange was renamed Woodward L'Orange.

L'Orange is a supplier of fuel injection systems for industrial diesel, heavy fuel oil and dual-fuel engines. L'Orange supplies fuel injection technology for engines that power a wide range of industrial applications including marine power and propulsion systems, special-application off road vehicles, locomotives, oil and gas processing, and power generation. L'Orange serves many large specialist diesel engine manufacturers, including Rolls-Royce Power Systems' subsidiaries, MTU and Bergen Engines, and other low to high speed engine builders. L'Orange has been integrated into the Company's Industrial segment.

Markets and Principal Lines of Business

We serve the aerospace and industrial markets through our two reportable segments – Aerospace and Industrial. Our customers require technological solutions to meet their needs for performance, efficiency, and reliability, and to reduce their costs of operation.

Within the aerospace market, we provide systems, components and solutions for both commercial and defense applications. Our key focus areas within this market are:

- Propulsion and combustion control solutions for turbine powered aircraft; and
- Fluid and motion control solutions for critical aerospace and defense applications.

Within the industrial market, our key focus areas are:

- Applications and control solutions for machines that produce electricity utilizing conventional or renewable energy sources; and
- Fluid, motion, and combustion control solutions for complex oil and gas, industrial, power generation, and transportation applications.

Products, Services and Applications

Aerospace

Our Aerospace segment designs, manufactures and services systems and products for the management of fuel, air, combustion and motion control. These products include fuel pumps, metering units, actuators, air valves, specialty valves, fuel nozzles, and thrust reverser actuation systems for turbine engines and nacelles, as well as flight deck controls, actuators, servocontrols, motors and sensors for aircraft. These products are used on commercial and private aircraft and rotorcraft, as well as on military fixed-wing aircraft and rotorcraft, guided weapons, and other defense systems.

We have significant content on a wide variety of commercial aircraft, rotorcraft and business jet platforms, such as the Airbus A320neo, Boeing 737 MAX and 787, Bell 429 and Gulfstream G650. We also have significant content on defense applications such as Blackhawk and Apache helicopters, F-18/A and F-35 fighter jets, and guided tactical weapons (for example, the Joint Direct Attack Munition ("JDAM")).

Revenues from the Aerospace segment are generated by sales to OEMs, tier-one suppliers, and prime contractors, and through aftermarket sales of components, such as provisioning spares or replacements, and spare parts. We also provide aftermarket maintenance, repair and overhaul, as well as other services to commercial airlines, repair facilities, military depots, third party repair shops, and other end users.

Industrial

Our Industrial segment designs, produces and services systems and products for the management of fuel, air, fluids, gases, motion, combustion and electricity. These products include actuators, valves, pumps, fuel injection systems, solenoids, ignition systems, speed controls, electronics and software, power converters, sensors and other devices that measure, communicate and protect electrical distribution systems. Our products are used on industrial gas turbines (including heavy frame, aeroderivative and small industrial gas turbines), steam turbines, reciprocating engines (including low speed, medium speed and high speed engines, natural gas vehicles and diesel, heavy fuel oil and dual-fuel engines), electric power generation and power distribution systems, wind turbines, and compressors. The equipment on which our products are found is used to generate and distribute power; to extract and distribute fossil and renewable fuels; in the mining of other commodities; and to convert fuel to work in transportation and freight (both marine and locomotives), mobile, and industrial equipment applications.

Revenues from our Industrial segment are generated primarily by sales to OEMs and by providing aftermarket products and other related services to our OEM customers. Our Industrial segment also sells products through an independent network of distributors and, in some cases, directly to end users.

Customers

For the fiscal year ended September 30, 2018, approximately 42% of our consolidated net sales were made to our five largest customers. Sales to our five largest customers represented approximately 43% of our consolidated net sales for the fiscal year ended September 30, 2017 and approximately 42% of our consolidated net sales for the fiscal year ended September 30, 2016.

Sales to our largest customer, General Electric, accounted for approximately 16% of our consolidated net sales in the fiscal year ended September 30, 2018, 16% of our consolidated net sales in the fiscal year ended September 30, 2017, and 17% of our consolidated net sales in the fiscal year ended September 30, 2016. Our accounts receivable from General Electric represented approximately 8% of total accounts receivable as of September 30, 2018 and 10% of total accounts receivable as of September 30, 2017. We believe General Electric and our other significant customers are creditworthy and will be able to satisfy their credit obligations to us.

The following customers account for approximately 10% or more of sales to each of our reportable segments for the fiscal year ended September 30, 2018.

	Customer
Aerospace	The Boeing Company, General Electric Company
Industrial	General Electric Company

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Competitive Environment

Our products and product support services are sold worldwide into a variety of markets. In all markets, we compete on the basis of differentiated technology and design, product performance and conformity with customer specifications. Additional factors are customer service and support, including on-time delivery and customer partnering, product quality, price, reputation and local presence. Both of our segments operate in uniquely competitive environments.

We believe that new competitors face significant barriers to entry into many of our markets, including various government mandated certification requirements to compete in the aerospace and industrial markets in which we participate.

Aerospace has significant product certification requirements to meet safety regulations, which form a basis for competition as well as a barrier to entry. Technological innovation and design, product performance and conformity with customer specifications, and product quality and reliability are of utmost importance in the aerospace and defense industry. In addition, on-time delivery, pricing, and joint development capabilities with customers are points of competition within this market.

Our customers include airframe and aircraft engine OEM manufacturers and suppliers to these manufacturers. We supply these customers with technologically innovative system and component solutions and align our technology roadmaps with our customers. We focus on responding to needs for reduced cost and weight, emission control and reliability improvements.

We compete with numerous companies around the world that specialize in fuel and air management, combustion, electronic control, aircraft motion control, flight deck control, and thrust reverser products. Our competitors in aerospace include divisions of Eaton, Honeywell, Moog, and Parker Hannifin, and United Technologies Corporation Aerospace Systems ("UTC Aerospace Systems") and its subsidiaries. In addition, some of our OEM customers are capable of developing and manufacturing similar products internally. Several competitors are also customers for our products, such as Honeywell, Parker Hannifin, and UTC Aerospace Systems.

We believe our products offer high levels of field reliability, which provides end users with an advantage in life-cycle cost. We address competition in aftermarket service through responsiveness to our customers' needs, providing short turnaround times, greater performance such as longer time between repairs, and maintaining a global presence.

Some of our customers are affiliated with our competitors through ownership or joint venture agreements. For example, Pratt and Whitney, one of our customers, is affiliated with UTC Aerospace Systems, one of our competitors. Similarly, GE Aviation has a joint venture with Parker Hannifin for the supply of fuel nozzles. In the past, we also have partnered with our customers. During fiscal year 2016, we entered into a strategic joint venture ("JV") with our largest customer, General Electric Company ("GE"), acting through its GE Aviation business unit. The JV primarily develops, manufactures and supports fuel systems for twin aisle aircraft engines and is described further in Note 5, Joint venture, in the Notes to the Consolidated Financial Statements in "Item 8 – Financial Statements and Supplementary Data."

We compete in part by establishing relationships with our customers' engineering organizations, and by offering innovative technical and commercial solutions to meet their market requirements. Our ability to design, develop and test an integrated system with a customer is a competitive differentiator, offering the customer savings in both resources and time.

Industrial operates in the global markets for industrial turbines, industrial reciprocating engines, electric power generation systems (including wind turbines), power distribution networks, transportation, and oil and gas. Many of these markets are subject to regulatory product and performance certifications to meet emissions and safety requirements, which form a basis for competition as well as a barrier to entry.

We compete with numerous companies that specialize in various engine, turbine, and power management products, and our OEM customers are often capable of developing and manufacturing similiar products internally. Many of our customers are large global OEMs that require suppliers to support them around the world and to meet increasingly higher requirements in terms of safety, quality, delivery, reliability and cost.

Competitors include ABB, Emerson, Enovation Controls, Heinzmann GmbH & Co., Hoerbiger, Invensys, Meggitt, Robert Bosch AG, and Schweitzer Electric. OEM customers with internal capabilities for similar products include Caterpillar, Cummins, General Electric, Siemens, Wartsila and Weichai.

We believe we are a market leader in providing our customers advanced technology and superior product performance at a competitive price. We focus on developing and maintaining close relationships with our OEM customers' engineering teams. Competitive success is based on the development of innovative components and systems that are aligned with the OEMs' technology roadmaps to achieve future reliability, emission, efficiency, and fuel flexibility targets.

Government Contracts and Regulation

Portions of our business, particularly in our Aerospace segment, are heavily regulated. We contract with numerous U.S. Government agencies and entities, including all of the branches of the U.S. military, the National Aeronautics and Space

Administration ("NASA"), and the Departments of Defense, Homeland Security, and Transportation. We also contract with similar government authorities outside the United States, subject in all cases to applicable law.

The U.S. Government, and potentially other governments, may terminate any of our government contracts, or any government contracts under which we are a subcontractor, at their convenience, as well as for default based on specified performance measurements. If any of our U.S. government contracts were to be terminated for convenience, we generally would be entitled to receive payment for work completed and allowable termination or cancellation costs. If any of our U.S. government contracts were to be terminated for our default, the U.S. Government generally would pay only for the work accepted, and could require us to pay the difference between the original contract price and the cost to re-procure the contract items, net of the work accepted from the original contract. The U.S. Government could also hold us liable for damages resulting from the default.

We must comply with, and are affected by, laws and regulations relating to the formation, administration and performance of U.S. Government contracts. These laws and regulations, among other things:

- require accurate, complete and current disclosure and certification of cost and pricing data in connection with certain contracts;
- impose specific and unique cost accounting practices that may differ from accounting principles generally accepted in the United States ("U.S. GAAP"), and therefore require robust systems to reconcile;
- impose regulations that define allowable and unallowable costs and otherwise govern our right to reimbursement under certain cost-based U.S. Government contracts;
- impose manufacturing specifications and other quality standards that may be more restrictive than for non-government business activities; and
- restrict the use and dissemination of information classified for national security purposes due to the regulations of the U.S. Government and foreign governments pertaining to the export of certain products and technical data.

Sales made directly to U.S. Government agencies and entities, or indirectly through third party manufacturers utilizing Woodward parts and subassemblies, collectively represented 23% of our sales for fiscal year 2018, 23% of our sales for fiscal year 2017, and 21% of our sales for fiscal year 2016. The level of U.S. spending for defense, alternative energy and other programs, and the mix of programs to which such funding is allocated, is subject to periodic congressional appropriation actions, and is subject to change, including elimination, at any time.

U.S. Government related sales from our reportable segments for fiscal years 2018, 2017 and 2016 were as follows:

	Direct U.S. Government Sales	Indirect U.S. Government Sales	Commercial Sales	Total
Year ended September 30, 2018				
Aerospace	$ 84,252	$ 429,386	$ 1,044,350	$ 1,557,988
Industrial	2,547	8,658	756,680	767,885
Total net external sales	$ 86,799	$ 438,044	$ 1,801,030	$ 2,325,873
Percentage of total net sales	4 %	19 %	77 %	100 %
Year ended September 30, 2017				
Aerospace	$ 106,685	$ 362,536	$ 873,118	$ 1,342,339
Industrial	3,726	10,814	741,806	756,346
Total net external sales	$ 110,411	$ 373,350	$ 1,614,924	$ 2,098,685
Percentage of total net sales	5 %	18 %	77 %	100 %

Year ended September 30, 2016				
Aerospace	$ 103,026	$ 310,952	$ 819,198	$ 1,233,176
Industrial	6,550	9,845	773,507	789,902
Total net external sales	$ 109,576	$ 320,797	$ 1,592,705	$ 2,023,078
Percentage of total net sales	5 %	16 %	79 %	100 %

Seasonality

We do not believe our sales, in total or in either business segment, are subject to significant seasonal variation. However, our sales have generally been lower in the first quarter of our fiscal year as compared to the immediately preceding quarter due to fewer working days resulting from the observance of various holidays and scheduled plant shutdowns for annual maintenance.

Sales Order Backlog

Our backlog of unshipped sales orders by segment as of October 31, 2018 and 2017 was as follows:

	October 31, 2018	% Expected to be filled by September 30, 2019	October 31, 2017
Aerospace	$ 1,355,635	76 %	$ 826,096
Industrial	292,897	96	189,283
	$ 1,648,532	80 %	$ 1,015,379

Our current estimate of the sales order backlog is based on unshipped sales orders that are open in our order entry systems. Unshipped orders are not necessarily an indicator of future sales levels because of variations in lead times and customer production schedules. Contributing to the increase in the backlog as of October 31, 2018 compared to October 31, 2017 is higher sales activity in our Aerospace segment and the inclusion of backlog attributable to L'Orange in our Industrial segment.

Manufacturing

We operate manufacturing and assembly plants in the United States, Europe and Asia. Our products consist of mechanical, electronic and electromechanical systems and components.

Aluminum, iron and steel are primary raw materials used to produce our mechanical components. Other commodities, such as gold, copper and nickel, are also used in the manufacture of our products, although in much smaller quantities. We purchase various goods, including component parts and services used in production, logistics and product development processes from third parties. Generally there are numerous sources for the raw materials and components used in our products, which we believe are sufficiently available to meet current requirements.

We maintain global strategic sourcing models to meet our global facilities' production needs while building long-term supplier relationships and efficiently managing our overall supply costs. We expect our suppliers to maintain adequate levels of quality raw materials and component parts, and to deliver such parts on a timely basis to support production of our various products. We use a variety of agreements with suppliers intended to protect our intellectual property and processes and to monitor and mitigate risks of disruption in our supply base that could cause a business disruption to our production schedules or to our customers. The risks monitored include supplier financial viability, business continuity, quality, delivery and protection of our intellectual property and processes.

Our customers expect us to maintain adequate levels of certain finished goods and certain component parts to support our warranty commitments and sales to our aftermarket customers, and to deliver such parts on a timely basis to support our customers' standard and customary needs. We carry certain finished goods and component parts in inventory to meet these rapid delivery requirements of our customers.

The Securities and Exchange Commission ("SEC") adopted disclosure rules for companies that use tantalum, tin, tungsten, and gold or their derivatives (collectively referred to as "conflict minerals") in their products, with substantial supply chain verification requirements in the event the conflict minerals come or may come from the Democratic Republic of Congo or adjoining countries. The European Union is considering the imposition of similar reporting obligations. Our conflict minerals report for calendar year 2017 was filed with the SEC on May 30, 2018. We may face reputational challenges with our customers, stockholders and other stakeholders if we use and/or are unable to sufficiently verify the origins of the conflict minerals used in our products. Further, due to the complexity of our supply chain, the implementation of the existing U.S. requirements and any additional European requirements could affect the sourcing and availability of metals used in the manufacture of a number of parts contained in our products. We have and will continue to incur costs associated with compliance, including time-consuming and costly efforts to determine the source of conflict minerals that may be used in our products.

Research and Development

We finance our research and development activities primarily with our own independent research and development funds. Our research and development costs include basic research, applied research, component and systems development, and other concept formulation studies.

Company funded expenditures related to new product development activities are expensed as incurred and are separately reported in the Company's Consolidated Statements of Earnings. Across both of our segments, research and development costs totaled $148,279 in fiscal year 2018, $126,519 in fiscal year 2017, and $126,170 in fiscal year 2016. Research and development costs were 6.4% of consolidated net sales in fiscal year 2018 compared to 6.0% in fiscal year 2017 and 6.2% in fiscal year 2016. See “Research and development costs” in Note 1, Operations and summary of significant accounting policies, to the Consolidated Financial Statements in “Item 8 – Financial Statements and Supplementary Data.”

Aerospace is focused on developing systems and components that we believe will be instrumental in helping our customers achieve their objectives of lower fuel consumption, lighter weight, more efficient performance, reduced emissions, and improved operating economics. Our development efforts support technology for a wide range of:

- aerospace turbine engine applications, which include commercial, business and military turbofan engines of various thrust classes, turboshaft engines and turboprop engines;
- electromechanical and hydraulic actuation systems for flight deck-to-flight surface control of fixed-wing aircraft and rotorcraft, and turbine engine nacelles, as well as guidance for weapon systems; and
- motion control components for integration into comprehensive actuation systems.

The aerospace industry has moved toward more electric (“fly-by-wire”), lighter weight aircraft, while demanding increased reliability and redundancy. In response, we are developing an expanded family of intelligent flight deck control products (including throttle and rudder controls) with both conventional and fly-by-wire technology, as well as motor driven actuation systems.

We collaborate closely with our customers as they develop their technology plans, which leads to new product concepts. We believe this collaboration allows us to develop technology that is aligned with our customers’ needs and therefore, increases the likelihood that our systems and components will be selected for inclusion in the platforms developed by our customers. Further, we believe our close collaboration with our customers during preliminary design stages allows us to provide products that deliver the component and system performance necessary to bring greater value to our customers. This preliminary work may include opportunities to test new products in order to validate concepts and demonstrate performance in challenging environments.

Most technology development programs begin years before an expected entry to service, such as those for the next generation of commercial aircraft. Other development programs result in nearer-term product launches associated with new OEM offerings, product upgrades, or product replacements on existing programs. Some of the major projects/programs we are developing are listed below.

We developed the fuel system, air management system, and actuation hardware for CFM International’s LEAP engine program. We also developed the actuation system, combustion system and oil system components for Pratt & Whitney’s Geared Turbo Fan (“GTF”) engine program. These programs target applications in the single aisle and regional aircraft markets with entry into service in the 2016 to 2020 timeframe. Both the LEAP engine and the GTF engine (later named the PurePower engine) have been selected by Airbus as options to power its A320neo aircraft, which entered service in 2016. In addition, the LEAP engine was selected by Boeing exclusively for its 737 MAX, which entered service in 2017, and by Comac for its C919 aircraft, which is currently in flight test. The PurePower engine was selected by Bombardier exclusively for its CSeries aircraft (now majority owned by Airbus and renamed the A220), which entered service in 2016. The PurePower engine was also chosen by Embraer for its EJets E2 aircraft family, which entered service in 2018, by Mitsubishi for the MRJ regional aircraft and by Irkut for the MS-21 aircraft. The MRJ and MS-21 aircraft are currently in flight test.

The JV with GE primarily develops, manufactures and supports fuel systems for twin aisle aircraft engines. The JV is developing the fuel system for the GE9X engine (which will power the Boeing 777X). We have been selected as the JV’s supplier of this fuel system.

We are the supplier for the thrust reverser actuation system (“TRAS”) for the Boeing 737 MAX and the CFM LEAP-engined Airbus A320neo. We are developing the TRAS for the Boeing 777X and the Airbus A330neo, as well as the TRAS on the new nacelle version of the PurePower engine to be used in the Airbus A320neo. The A330neo is scheduled to enter service in 2018, and the 777X in 2020.

We are currently developing the fuel system, air management components, and actuation hardware for the Passport engine program, as well as the TRAS for the integrated propulsion system. Passport is the next generation GE Aviation engine for the large business aviation market, and has been selected by Bombardier to power its Global 7500 long-range business aircraft, expected to enter into service in 2018 and 2019, respectively.

In addition, we developed sensor solutions for the Airbus A350 high lift system, an actuation sub-system for the Boeing 787-9 that improves fuel burn, flight deck control components for the Airbus A220 and control and sensing solutions for the Boeing KC-46A refueling tanker boom subsystem. We are currently developing flight deck control components for the Bombardier Global 7500 aircraft, as well as other business aviation aircraft.

Industrial is focused on developing innovative technologies, including integrated control systems and system components, that enable our customers to cost-effectively meet mandated emissions regulations and fuel efficiency demands, allow for usage of a wider range of fuel sources, increase reliability (particularly in harsh environments), and reduce total cost of ownership. Our development efforts support technology for a wide range of:

- products that improve the quality of combustion processes and provide more precise flow of various fuels and gases in our customers' gas turbines and industrial reciprocating engines;
- electronic devices and software solutions that provide improved control and protection of reciprocating engines, gas turbines, steam turbines, wind turbines, and engine- and turbine-powered equipment; and
- advanced prognostic and predictive intelligence that is integrated into many of our complex products and systems.

These development efforts support our strategy of being the recognized market leader for:

- application and control solutions for any machine that produces electricity utilizing conventional and renewable energy sources; and
- control solutions for complex oil and gas, industrial and transportation applications.

We collaborate closely with our customers to jointly align our technology roadmaps. This collaboration allows us to develop new systems, products and technologies consistent with our customers' future needs for performance, emissions and efficiency to deliver greater value. We strive to stay ahead of the competition through our modeling, prototype, and state of the art test capabilities.

We partner with our customers on programs that can take months or years of development before being fully validated and launched into production. We also work with our customers on shorter term application programs for product and system upgrades. Some of the major projects/programs we are developing include:

- high pressure common rail diesel fuel injection systems;
- natural gas metering and combustion systems;
- comprehensive electronic control and air management solutions for natural gas and diesel engines;
- emission certified stationary and mobile gas engine systems;
- heavy frame and aeroderivative electric actuation systems enabling turbine electrification with cyber secure products;
- steam turbine controls and valves that greatly simplify installation and significantly improve reliability; and
- next generation full size wind turbine converters.

Employees

As of October 31, 2018, we employed approximately 8,300 full-time employees of which approximately 2,800 were located outside of the United States, with the majority in Germany, Poland and China. We believe that our relationships with our employees are good.

Approximately 14% of our total full-time workforce were union employees as of October 31, 2018, all of whom work for our Aerospace segment and are located in the United States. The collective bargaining agreements with our union employees are generally renewed through contract renegotiation near the contract expiration dates. The MPC Employees Representative Union contract, which covers 514 employees as of October 31, 2018, expires October 1, 2021. The Local Lodge 727-N International Association of Machinists and Aerospace Workers agreement, which covers 445 employees as of October 31, 2018, expires April 22, 2021. The International Union, United Automobile, Aerospace and Agricultural Implement Workers of America and Local No. 509 agreement, which covers 199 employees as of October 31, 2018, expires June 4, 2021. We believe that our relationships with our union employees and the representative unions are good.

Almost all of our other employees in the United States were at-will employees as of October 31, 2018, and therefore, not subject to any type of employment contract or agreement. Our executive officers each have change-in-control agreements which have been filed with the SEC.

Outside of the United States, we enter into employment contracts and agreements in those countries in which such relationships are mandatory or customary, including coordination through local works' councils. The provisions of these agreements correspond in each case with the required or customary terms in the subject jurisdiction.

Patents, Intellectual Property, and Licensing

We own numerous patents and other intellectual property, and have licenses for the use of patents and other intellectual property owned by others, which relate to our products and their manufacture. In addition to owning a large portfolio of intellectual property, we also license intellectual property to and from third parties. For example, the U.S. Government has certain rights in our patents and other intellectual property developed in performance of certain government contracts, and it may use or authorize others to use the inventions covered by such patents for government purposes as allowed by law.

Intellectual property not covered by patents (or patent applications) includes trade secrets and other technological know-how that is not patentable or for which we have elected not to seek patent protection, including intellectual property relating to our manufacturing processes and engineering designs. Such unpatented technology, including research, development and engineering technical skills and know-how, as well as unpatented software, is important to our overall business and to the operations of each of our segments.

While our intellectual property assets taken together are important, we do not believe our business or either of our segments would be materially affected by the expiration of any particular intellectual property right or termination of any particular intellectual property patent license agreement.

As of September 30, 2018, our Consolidated Balance Sheet includes $700,883 of net intangible assets. This value represents the carrying values, net of amortization, of certain assets acquired in various business acquisitions and does not purport to represent the fair value of our acquired intellectual property as of September 30, 2018.

U.S. GAAP requires that research and development costs be expensed as incurred; therefore, as we develop new intellectual property in the normal course of business, the costs of developing such assets are expensed as incurred, with no corresponding intangible asset recorded.

Environmental Matters and Climate Change

The Company is regulated by federal, state and international environmental laws governing our use, transport and disposal of substances and control of emissions. Compliance with these existing laws has not had a material impact on our capital expenditures, earnings or global competitive position.

We use hazardous materials and/or regulated materials in our manufacturing operations. We also own, operate, have acquired, and may in the future acquire facilities that were formerly owned and operated by others that used such materials. We believe that the risk that a significant release of regulated materials has occurred in the past or will occur in the future cannot be completely eliminated or prevented. From time to time we engage in environmental remedial activities, generally in coordination with other companies, pursuant to federal and state laws. In addition, we may be exposed to other environmental costs including participation in superfund sites or other similar jurisdictional initiatives. When it is reasonably probable we will pay remediation costs at a site, and those costs can be reasonably estimated, we accrue a liability for such future costs with a related charge against our earnings. In formulating that estimate and recognizing those costs, we do not consider amounts expected to be recovered from insurance companies, or others, until such recovery is assured. Currently, we have no sites undergoing remediation.

Our manufacturing facilities generally do not produce significant volumes or quantities of byproducts, including greenhouse gases, that would be considered hazardous waste or otherwise harmful to the environment. We do not expect legislation currently pending or expected in the next several years to have a significant negative impact on our operations in any of our segments.

Domestic and foreign legislative initiatives on emissions control, renewable energy, and climate change tend to favorably impact the sale of our energy control products. For example, our Industrial segment produces inverters for wind turbines and energy control products that help our customers maximize engine efficiency and minimize wasteful emissions, including greenhouse gases.

Executive Officers of the Registrant

Information about our executive officers is provided below. There are no family relationships between any of the executive officers listed below.

Thomas A. Gendron, Age 57. Chairman of the Board since January 2008; Chief Executive Officer, President, and Director since July 2005; Chief Operating Officer and President September 2002 through June 2005; Vice President and General Manager of Industrial Controls June 2001 through September 2002; Vice President of Industrial Controls

April 2000 through May 2001; Director of Global Marketing and Industrial Controls' Business Development February 1999 through March 2000.

Robert F. Weber, Jr., Age 64. Vice Chairman, Chief Financial Officer and Treasurer since September 2011, and Chief Financial Officer and Treasurer since August 2005. Prior to August 2005, Mr. Weber was employed at Motorola, Inc. for 17 years, where he held various positions, including Corporate Vice President and General Manager, EMEA Auto. Prior to this role, Mr. Weber served in a variety of financial positions at both a corporate and operating unit level with Motorola.

Sagar Patel, Age 52. President, Aircraft Turbine Systems since June 2011. Prior to this role, Mr. Patel was employed at General Electric for 18 years, most recently serving as President, Mechanical Systems, GE Aviation, from March 2009 through June 2010. He served as President, Aerostructures, GE Aviation from July 2008 through July 2009 and as President and General Manager, MRS Systems, Inc., GE Aircraft Engines, from October 2005 through June 2008.

Chad R. Preiss, Age 53. President, Industrial Control Systems since November 2016, President, Engine Systems October 2009 through November 2016; Group Vice President, Engine Systems October 2008 through September 2009; Vice President, Sales, Service, and Marketing, Engine Systems December 2007 through September 2008; and Vice President, Industrial

Controls September 2004 through December 2007. Prior to this role, Mr. Preiss served in a variety of engineering and marketing/sales management roles, including Director of Business Development, since joining Woodward in 1988.

Matthew F. Taylor, Age 56. President, Airframe Systems since February 2018; Corporate Vice President, Supply Chain since February 2011; Vice President, Engine Fluid Systems and Controls Center of Excellence ("CoE") October 2009 through February 2011; General Manager, Fluid Systems and Controls CoE December 2006 through October 2009; Director of Operations, Fluid Systems and Controls June 2005 through December 2006. Prior to joining Woodward in June 2005, Mr. Taylor was the Vice President and General Manager, Warner Electric and served in a variety of general management roles at Eaton Corporation from February 1998 through August 2003.

A. Christopher Fawzy, Age 49. Corporate Vice President, General Counsel, Corporate Secretary and Chief Compliance Officer since October 2009; Vice President, General Counsel, and Corporate Secretary June 2007 through September 2009. Mr. Fawzy became the Company's Chief Compliance Officer in August 2009. Prior to joining Woodward, Mr. Fawzy was employed by Mentor Corporation, a global medical device company. He joined Mentor in 2001 and served as Corporate Counsel, then was promoted to General Counsel in 2003, and was appointed Vice President, General Counsel and Secretary in 2004.

Other Corporate Officers of the Registrant

Information about our other corporate officers is provided below. There are no family relationships between any of the corporate officers listed below or between any of the corporate officers listed below and the aforementioned executive officers.

James D. Rudolph, Age 57. Corporate Vice President since November 2016, President, Industrial Turbomachinery Systems April 2011 through November 2016; Corporate Vice President, Global Sourcing October 2009 through April 2011; Vice President, Global Sourcing April 2009 through October 2009; Director of Global Sourcing April 2005 through April 2009; Director of Engineering for Industrial Controls March 2000 through April 2005. Prior to March 2000, Mr. Rudolph served in a variety of engineering, operations and sales roles since joining Woodward in 1984.

Steven J. Meyer, Age 58. Corporate Vice President, Human Resources since October 2009; Vice President, Human Resources November 2006 through September 2009; Director, Global Human Resources November 2002 through October 2006; Director, Human Resources for Industrial Controls July 1997 through October 2002. Prior to joining Woodward, Mr. Meyer was employed by PG&E Corporation and Nortel in a variety of roles in human resources.

John D. Tysver, Age 56. Corporate Vice President, Technology since October 2016; Vice President, Aircraft Turbine Systems' Programs, Systems and Research & Development July 2015 through October 2016; Vice President and General Manager of Aircraft Turbine Systems' Fuel Systems COE April 2011 through July 2015; Vice President of Turbine Systems' Systems & Engineering October 2009 through April 2011; Director of Turbine Systems' Systems & Engineering November 2006 through October 2009. Prior to November 2006, Mr. Tysver served in a variety of engineering leadership roles since joining Woodward in March 1991. Prior to joining Woodward, Mr. Tysver served in engineering roles at Sundstrand (now UTC Aerospace Systems).

Dan Bowman, Age 53. Corporate Vice President, Strategy and Business Development since August 2017; and Vice President, Sales, Marketing, and Commercial Operations for Aircraft Turbine Systems April 2007 through August 2017. Prior to joining Woodward, Mr. Bowman served as the Vice President of Sales, Marketing and Service at Fairbanks Morse Engine and held a variety of sales, marketing, and business development leadership roles at GE Aviation.

Information available on Woodward's Website and Social Media

Through a link on the Investor Information section of our website, www.woodward.com, we make available, free of charge, the following filings as soon as reasonably practicable after they are electronically filed or furnished to the SEC: our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, Proxy Statements on Schedule 14A, and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as well as Section 16 reports of our officers and directors. The SEC also maintains a website that contains our SEC filings. The address of the site is www.sec.gov. We provide notifications of news or announcements regarding our financial performance, including SEC filings, investor events, press and earnings releases as part of our investor relations website. We have used, and intend to continue to use, our investor relations website, as well as the following as of the date of this filing, as means of disclosing material non-public information and for complying with the disclosure obligations under Regulation FD:

- Twitter: @woodward_inc
- Facebook: Facebook.com/woodwardinc
- LinkedIn: Linkedin.com/company/woodward
- Google Plus: +WoodwardInc
- YouTube: YouTube.com/user/woodwardinc
- Goldenline (Poland): http://www.goldenline.pl/firma/woodward

· XING (Germany): https://www.xing.com/companies/woodwardinc.

None of the information contained on our website, or the above-mentioned social media sites, is incorporated into this document by reference.

Stockholders may obtain, without charge, a single copy of Woodward's 2018 Annual Report on Form 10-K upon written request to the Corporate Secretary, Woodward, Inc., 1081 Woodward Way, Fort Collins, Colorado 80524.

Item 1A.Risk Factors

Investment in our securities involves risk. An investor or potential investor should consider the risks summarized in this section when making investment decisions regarding our securities.

Important factors that could individually, or together with one or more other factors, affect our business, results of operations, financial condition, and/or cash flows include, but are not limited to, the following:

Company Risks

A significant portion of our revenue is concentrated among a relatively small number of customers. A decline in our customers' business, or in our business with, or financial distress of, such customers could decrease our consolidated net sales or impair our ability to collect amounts due and payable and have a material adverse effect on our business, financial condition, results of operations and cash flows.

We have fewer customers than many companies with similar sales volumes. For the fiscal year ended September 30, 2018, approximately 42% of our consolidated net sales were made to our five largest customers. Sales to our five largest customers for the fiscal year ended September 30, 2017 represented approximately 43% of our consolidated net sales. Sales to our largest customer, General Electric, accounted for approximately 16% of our consolidated net sales in the fiscal year ended September 30, 2018, 16% in the fiscal year ended September 30, 2017 and 17% in the fiscal year ended September 30, 2016. Accounts receivable from General Electric represented approximately 8% of accounts receivable at September 30, 2018 and 10% at September 30, 2017. Sales to our next largest customer accounted for approximately 12% of our consolidated net sales in the fiscal year ended September 30, 2018, 11% in the fiscal year ended September 30, 2017, and 8% in the fiscal year ended September 30, 2016. If any of our significant customers were to change suppliers, in-source production, institute significant restructuring or cost-cutting measures, or experience financial distress, these significant customers may substantially reduce, or otherwise be unable to pay for, purchases from us. Accordingly, our consolidated net sales could decrease significantly or we may experience difficulty collecting, or be unable to collect, amounts due and payable, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Instability in the financial markets and global or regional economic weakness or uncertainty could have a material adverse effect on the ability of our customers to perform their obligations to us and on their demand for our products and services.

Over the last six to eight years, there has been widespread concern over the instability in the financial markets and their influence on the global economy. As a result of the extreme volatility in the credit and capital markets and global economic uncertainty, our current or potential customers may experience cash flow problems and, as a result, may modify, delay or cancel plans to purchase our products. Additionally, if our customers face financial distress or are unable to secure necessary financing, they may not be able to pay, or may delay payment of, accounts receivable that are owed to us. Any inability of current or potential customers to pay us for our products may adversely affect our earnings and cash flows.

The general economic environment significantly affects demand for our products and services. Periods of slowing economic activity currently impacting some of our markets, may cause global or regional slowdowns in spending on infrastructure development in the markets in which we operate, and customers may reduce their purchases of our products and services. In addition, weakness or uncertainty in any of our global markets, such as that most recently caused by the imposition and reciprocation of tariffs and duties, may materially adversely affect one or more areas of our business.

There can be no assurance that any market and economic uncertainty in the U.S. or internationally would not have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Our profitability may suffer if we are unable to manage our expenses due to sales increases, sales decreases, or impacts of capital expansion projects, or if we experience change in product mix.

Some of our expenses are relatively fixed in relation to changes in sales volume and are difficult to adjust in the short term. Expenses driven by business activity other than sales level and other long-term expenditures, such as fixed manufacturing overhead, capital expenditures and research and development costs, may be difficult to reduce in a timely manner in response to a reduction in sales. Expenses such as depreciation or amortization, which are the result of past capital expenditures or business acquisitions, or interest expense, which is the result of the incurrence of debt primarily to finance our growth or business acquisitions, are generally fixed regardless of sales levels. In addition, the achievement of manufacturing efficiencies associated with capital expansion projects may not meet management's current expectations. Due to our long sales cycle, in periods of sales increases it may be difficult to rapidly increase our production of finished goods, particularly if such sales increases are unanticipated. An increase in the production of our finished goods requires increases in both the purchases of raw materials and components and in the size of our workforce. If a sudden, unanticipated need for raw materials, components and labor arises in order to meet unexpected sales demand, we could experience difficulties in sourcing raw materials, components and labor at a favorable cost or to meet our production needs. These factors could result in delays in fulfilling customer sales contracts, damage to our reputation and relationships with our customers, an inability to meet the demands of the markets that we serve, which in turn could prevent us from taking advantage of business opportunities or responding to competitive pressures, and result in an increase in variable and fixed costs leading to a decrease in net earnings or even net losses. In addition, we sell products that have varying profit margins, and increases or decreases in sales of our various products may change the mix of products that we sell during any period. Any of these events could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

The long sales cycle, customer evaluation process and implementation period of our products and services may increase the costs of obtaining orders and reduce the predictability of sales cycles and our inventory requirements.

Our products and services are technologically complex and require significant capital commitments. Prospective customers generally must commit significant resources to test and evaluate our products and to install and integrate them into larger systems. Orders expected in one quarter may shift to another quarter or be cancelled with little advance notice as a result of customers' budgetary constraints, internal acceptance reviews and other factors affecting the timing of customers' purchase decisions. In addition, customers often require a significant number of product presentations and demonstrations before reaching a sufficient level of confidence in the product's performance and compatibility with the approvals that typically accompany capital expenditure approval processes. The difficulty in forecasting demand increases the challenge in anticipating sales cycles and our inventory requirements, which may cause us to over-produce finished goods and could result in inventory write-offs, or could cause us to under-produce finished goods. Any such over-production or under-production could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Our product development activities may not be successful, may be more costly than currently anticipated, or we may not be able to produce newly developed products at a cost that meets the anticipated product cost structure.

Our business involves a significant level of product development activities, generally in connection with our customers' development activities. Industry standards, customer expectations, or other products may emerge that could render one or more of our products or services less desirable or obsolete. Maintaining our market position requires continued investment in research and development. During an economic downturn or a subsequent recovery, we may need to maintain our investment in research and development, which may limit our ability to reduce these expenses in proportion to a sales shortfall. In addition, increased investments in research and development may divert resources from other potential investments in our business, such as acquisitions or investments in our facilities, processes and operations. If these activities are not as successful as currently anticipated, are not completed on a timely basis, or are more costly than currently anticipated, or if we are not able to produce newly developed products at a cost that meets the anticipated product cost structure, then our future sales, margins and/or earnings could be lower than expected, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Our business may be adversely affected by government contracting risks.

Sales made directly to U.S. Government agencies and entities were 4% of total net sales during fiscal year 2018, 5% during fiscal year 2017, and 5% during fiscal year 2016, primarily in the aerospace market. Sales made directly to U.S. Government agencies and entities, or indirectly through third party manufacturers, such as tier-one prime contractors, utilizing Woodward parts and subassemblies, accounted for approximately 23% of total sales in fiscal year 2018, 23% in fiscal year 2017, and 21% in fiscal year 2016. Our contracts with the U.S. Government are subject to certain unique risks, including the risks set forth below, some of which are beyond our control, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

- The level of U.S. defense spending is subject to periodic congressional appropriation actions and is subject to change at any time. The mix of programs to which such funding is allocated is also uncertain, and we can provide no assurance that an increase in defense spending will be allocated to programs that would benefit our business. If the amount of spending were to decrease, or there were a shift from certain aerospace and defense programs on which we have content to other programs on which we do not, our sales could decrease. In addition, one or more of the aerospace or defense programs that we currently support could be phased-out or terminated. Any such reductions in U.S. Government needs under these existing aerospace and defense programs, unless offset by other aerospace and defense programs and opportunities, could have a material adverse effect on our sales.
- Our U.S. Government contracts and the U.S. Government contracts of our customers are subject to modification, curtailment or termination by the government, either for the convenience of the government or for default as a result of a failure by us or our customers to perform under the applicable contract. If any of our contracts are terminated by

the U.S. Government, our backlog would be reduced, in accordance with contract terms, by the expected value of the remaining work under such contracts. In addition, we are not the prime contractor on most of our contracts for supply to the U.S. Government, and the U.S. Government could terminate a prime contract under which we are a subcontractor, irrespective of the quality of our products and services as a subcontractor.

- We must comply with procurement laws and regulations relating to the formation, administration and performance of our U.S. Government contracts and the U.S. Government contracts of our customers. The U.S. Government may change procurement laws and regulations from time to time. A violation of U.S. Government procurement laws or regulations, a change in U.S. Government procurement laws and regulations, or a termination arising out of our default could expose us to liability, debarment, or suspension and could have an adverse effect on our ability to compete for future contracts and orders.
- We are subject to government inquiries, audits and investigations due to our business relationships with the U.S. Government and the heavily regulated industries in which we do business. In addition, our contract costs are subject to audits by the U.S. Government. U.S. Government agencies, including the Defense Contract Audit Agency and the Defense Contract Management Agency, routinely audit government contractors and subcontractors. These agencies review our performance under contracts, cost structure and compliance with applicable laws, regulations, and standards, as well as the adequacy of and our compliance with our internal control systems and policies. Any costs found to be misclassified or inaccurately allocated to a specific contract would be deemed non-reimbursable, and to the extent already reimbursed, would be refunded. Any inadequacies in our systems and policies could result in withholds on billed receivables, penalties and reduced future business. Any inquiries or investigations, including those related to our contract pricing, could potentially result in civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments, fines, suspension, and/or debarment from participating in future business opportunities with the U.S. Government. Such actions could harm our reputation, even if such allegations are later determined to be unfounded, and could have a material adverse effect on our business, results of operations, financial condition and cash flows.

Product liability claims, product recalls or other liabilities associated with the products and services we provide may force us to pay substantial damage awards and other expenses that could exceed our accruals and insurance coverage.

The manufacture and sale of our products and the services we provide expose us to risks of product and other tort claims, and any resulting liability. We currently have and have had in the past product liability claims relating to our products, and we will likely be subject to additional product liability claims in the future for past, current and future products. Some of these claims may have a material adverse effect on our business, financial condition, results of operations and cash flows. We also provide certain services to our customers and are subject to claims with respect to the services provided. In providing such services, we may rely on subcontractors to perform all or a portion of the contracted services. It is possible that we could be liable to our customers for work performed by a subcontractor. Regardless of the outcome, product liability claims can be expensive to defend, can divert the attention of management and other personnel for significant periods of time, and can cause reputational damage. While we believe that we have appropriate insurance coverage available to us related to any such claims, our insurance may not cover all liabilities or be available in the future at a cost acceptable to us. An unsuccessful result in connection with a product liability claim, where the liabilities are not covered by insurance or for which indemnification or other recovery is not available, could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Suppliers may be unable to provide us with materials of sufficient quality or quantity required to meet our production needs at favorable prices or at all.

We are dependent upon suppliers for parts and raw materials used in the manufacture of components that we sell to our customers, and our raw material costs are subject to commodity market fluctuations. We may experience an increase in costs for parts or raw materials that we source from our suppliers, or we may experience a shortage of parts or raw materials for various reasons, such as the loss of a significant supplier, high overall demand creating shortages in parts and supplies we use, financial distress, work stoppages, natural disasters, fluctuations in commodity prices, the imposition of tariffs or other duties, or production or distribution difficulties that may affect one or more of our suppliers. In particular, current or future global economic uncertainty may affect the financial stability of our key suppliers or their access to financing, which may in turn affect their ability to perform their obligations to us. Our customers rely on us to provide on-time delivery and have certain rights if our delivery standards are not maintained. A significant increase in our supply costs, including for raw materials that are subject to commodity price fluctuations and the imposition of tariffs, or a protracted interruption of supplies for any reason, could result in the delay of one or more of our customer contracts or could damage our reputation and relationships with customers. In addition, quality and sourcing issues that our suppliers may experience can also adversely affect the quality and effectiveness of our products and services and may result in liability or reputational harm to us. Any of these events could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Subcontractors may fail to perform contractual obligations, which would adversely affect our ability to meet our obligations to our customers.

We frequently subcontract portions of work due under contracts with our customers and are dependent on the continued availability and satisfactory performance by these subcontractors. Nonperformance or underperformance by subcontractors could materially impact our ability to perform obligations to our customers. A subcontractor's failure to perform could result in a customer terminating our contract for default, expose us to liability, substantially impair our ability to compete for future contracts and orders, and limit our ability to enforce fully all of our rights under these agreements, including any rights to indemnification. Any of these events could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

We may be unable to successfully execute or effectively integrate acquisitions, and divestitures may not occur as planned.

We recently acquired L'Orange and its related operations located in Germany, the United States and China. We have in the past and may, in the future, pursue acquisitions of other companies and assets. We may also seek to divest non-core businesses or assets. The success of these transactions will depend on, among other things, our ability to integrate assets and personnel acquired in these transactions and to apply our internal controls process to these acquired businesses. The integration of these acquisitions may require significant attention from our management, and the diversion of management's attention and resources could have a material adverse effect on our ability to manage our business. In addition, we may incur unanticipated costs or expenses following an acquisition, including post-closing asset impairment charges, expenses associated with eliminating duplicate facilities, and other liabilities.

The success of our acquisitions is subject to risk, including, among others, the following:

- failure to realize expected technological and product synergies, economies of scale and cost reductions;
- unforeseen expenses, delays or conditions related to the acquisitions, including those due to regulations;
- the assumption of unexpected liabilities or the exposure to unexpected penalties or other enforcement actions;
- adverse effects on existing business relationships with suppliers and customers, including delays or cancellations of customer purchases, as well as revenue attrition in excess of anticipated levels if existing customers alter or reduce their historical buying patterns;
- risks associated with entering into markets in which Woodward has limited or no prior experience, including potentially less visibility into demand;
- inaccurate assumptions that may have been or may be made regarding the acquired business or the integration process;
- financial and operational results that may differ materially from our assumptions and forecasts;
- unforeseen difficulties that may arise in integrating operations, processes and systems;
- higher than expected investments that may be required to implement necessary compliance processes and related systems, including information technology systems, accounting systems and internal controls over financial reporting;
- fluctuations in foreign currency exchange rates that may impact the agreed upon purchase price;
- the failure to retain, motivate and integrate key management and other employees of the acquired business;
- higher than expected costs that may arise due to unforeseen changes in tax, trade, environmental, labor, safety, payroll or pension policies in any jurisdiction in which the acquired business conducts its operations; and
- problems that we may experience in retaining customers and integrating customer bases.

Many of these factors are outside of our control and any one of them could result in increased costs, decreases in the amount of expected revenues, and diversion of management's time and attention. Furthermore, we may not realize the degree or timing of benefits we anticipate when we first enter into these transactions. Failure to implement our acquisition strategy, including successfully integrating acquired businesses, could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

We have engaged in restructuring and alignment activities from time to time and may need to implement further restructurings or alignments in the future, and there can be no assurance that our restructuring or alignment efforts will have the intended effects.

From time to time, we have responded to changes in our industry and the markets we serve, or other changes in our business, by restructuring or aligning our operations. In fiscal year 2018, we announced a restructuring plan and incurred workforce management costs primarily in connection with our decision to relocate our Duarte, California operations to our newly renovated Drake Campus in Fort Collins, Colorado. Historically, our restructuring activities have included workforce management and other restructuring charges related to acquired businesses, including, among others, changes associated with integrating similar operations, managing our workforce, vacating or consolidating certain facilities and cancelling certain contracts. Due to cost reduction measures or changes in the industry and markets in which we compete, we may decide to implement restructuring or alignment activities in the future, such as closing plants, moving production lines, or making additions, reductions or other changes to our management or workforce. These restructuring and/or alignment activities generally result in charges and expenditures that may adversely affect our financial results for one or more periods.

Restructuring and/or alignment activities can create unanticipated consequences, such as instability or distraction among our workforce, and we cannot be sure that any restructuring or alignment efforts that we undertake will be successful. A variety of risks could cause us not to realize expected cost savings, including, among others, the following:

- higher than expected severance costs related to staff reductions;
- higher than expected costs of closing plants;
- higher than expected retention costs for employees that will be retained;
- higher costs to hire new employees or delays or difficulty hiring the employees needed;
- higher than expected stand-alone overhead expenses;
- higher than expected operating costs associated with moving production lines;
- delays in the anticipated timing of activities related to our cost-saving plan; and
- other unexpected costs associated with operating the business.

If we are unable to structure our operations in the light of evolving market conditions, it could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

We operate in a highly competitive industry and, if we are unable to compete effectively in one or more of our markets, our business, financial condition and results of operations may be adversely affected.

We face intense competition from a number of established competitors in the United States and abroad, some of which are larger in size or are divisions of large diversified companies with substantially greater financial resources. In addition, global competition continues to increase. Companies compete on the basis of providing products that meet the needs of customers, as well as on the basis of price, quality, and customer service. Changes in competitive conditions, including the availability of new products and services, the introduction of new channels of distribution, and changes in OEM and aftermarket pricing, could impact our relationships with our customers and may adversely affect future sales, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Further, the markets in which we operate experience rapidly changing technologies and frequent introductions of new products and services. The technological expertise we have developed and maintained could become less valuable if a competitor were to develop a breakthrough technology that would allow it to match or exceed the performance of existing technologies at a lower cost. If we are unable to develop competitive technologies, future sales or earnings could be lower than expected, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

In all of our markets, customers frequently develop new supply chain initiatives and/or sourcing models which could create new opportunities, but also could apply pressure to our customer relationships and/or strategic position with those customers.

Consolidation in the aerospace market and our participation in a strategic joint venture with GE may make it more difficult to secure long-term sales in certain aerospace markets.

In January 2016, Woodward and General Electric Company (“GE”), acting through its GE Aviation business unit, consummated the formation of a strategic joint venture between Woodward and GE (the “JV”). The JV agreement does not restrict Woodward from entering into any market, however, consolidation in the aircraft engine market is increasingly prevalent, resulting in fewer engine manufacturers, and thus it may become more difficult for Woodward to secure new business with GE competitors on similar product applications both within and outside the specific JV market space. Additionally, if GE fails to win new content in the market space covered by the JV, Woodward may be prevented from expanding content on future commercial aircraft engines in those markets.

We may not be able to obtain financing, on acceptable terms or at all, to implement our business plans, complete acquisitions, or otherwise take advantage of business opportunities or respond to competitive pressures.

During the last several years, global financial markets, including the credit and debt and equity capital markets, and economic conditions have been volatile. These issues, along with significant write-offs in the financial services sector, the re-pricing of credit risk, and the global economic uncertainty, have in the past made, and may in the future make, it difficult to obtain financing. In addition, as a result of concerns about the stability of financial markets generally and the solvency of counterparties specifically, the cost of obtaining money from the credit markets may increase as many lenders and institutional investors have or may increase interest rates, enact tighter lending standards, refuse to refinance existing debt at maturity either at all or on terms similar to existing debt, and reduce and, in some cases, cease to provide financing to borrowers. Due to these factors, we cannot be certain that financing, to the extent needed, will be available on acceptable terms or at all. If financing is not available when needed, or is available only on unacceptable terms, we may be unable to implement our business plans, complete acquisitions, fund significant capital expenditures, or otherwise take advantage of business opportunities or respond to competitive pressures, any of which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Our debt obligations and the restrictive covenants in the agreements governing our debt could limit our ability to operate our business or pursue our business strategies, could adversely affect our business, financial condition, results of operations, and cash flows, and could significantly reduce stockholder benefits from a change of control event.

As of September 30, 2018, our total debt was $1,248,927, excluding unamortized debt issuance costs and including $266,541 of borrowings on our revolving credit facility, of which $150,000 was classified as current and $116,541 was classified as noncurrent, $793,000 in unsecured notes denominated in U.S. dollars issued in private placements, $185,751 of unsecured notes denominated in Euros issued in private placements and $3,635 in other short-term borrowings. Our debt obligations could require us to dedicate a portion of our cash flow from operations to payments on our indebtedness, reducing the availability of our cash flow for other purposes, including business development efforts and mergers and acquisitions. We are contractually obligated under the agreements governing our long-term debt to make principal payments of $143,000 in fiscal year 2019, of which we made a payment of $100,000 on October 1, 2018 using proceeds from borrowings on our revolving credit facility, $116,541 in fiscal year 2020, $100,000 in fiscal year 2021, $0 in fiscal year 2022, $0 in fiscal year 2023, and the remaining $735,751 in subsequent fiscal years. Interest on our long-term notes is payable semi-annually, with the exception of the Series J Notes which is payable quarterly, each year until all principal is paid. Our debt obligations could make us more vulnerable to general adverse economic and industry conditions and could limit our flexibility in planning for, or reacting to, changes in our business and the industries in which we operate, thereby placing us at a disadvantage to our competitors that have less indebtedness.

Our existing revolving credit facility and note purchase agreements impose financial covenants on us and our subsidiaries that require us to maintain certain leverage ratios and minimum levels of consolidated net worth. Certain of these agreements require us to repay outstanding borrowings with portions of the proceeds we receive from certain sales of property or assets and specified future debt offerings.

These financial covenants place certain restrictions on our business that may affect our ability to execute our business strategy successfully or take other actions that we believe would be in the best interests of our Company. These restrictions include limitations or restrictions, among other things, on our ability and the ability of our subsidiaries to:

- incur additional indebtedness;
- pay dividends or make distributions on our capital stock or certain other restricted payments or investments;
- purchase or redeem stock;
- issue stock of our subsidiaries;
- make domestic and foreign investments and extend credit;
- engage in transactions with affiliates;
- transfer and sell assets;
- effect a consolidation or merger or sell, transfer, lease, or otherwise dispose of all or substantially all of our assets; and
- create liens on our assets to secure debt.

These agreements contain certain customary events of default, including certain cross-default provisions related to other outstanding debt arrangements. Any breach of the covenants under these agreements or other event of default could cause a default under these agreements and/or a cross-default under our other debt arrangements, which could restrict our ability to borrow under our revolving credit facility. If there were an event of default under certain provisions of our debt arrangements that was not cured or waived, the holders of the defaulted debt may be able to cause all amounts outstanding with respect to the debt instrument, plus any required settlement costs, to be due and payable immediately. Our assets and cash flow may not be sufficient to fully repay borrowings under our outstanding debt instruments if accelerated upon an event of default. If we are unable to repay, refinance, or restructure our indebtedness as required, or amend the covenants contained in these agreements, the lenders or note holders may be entitled to obtain a lien or institute foreclosure proceedings against our assets. Any of these events could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

The Company, at its option, is permitted at any time to prepay all or any part of the then-outstanding principal amount of any series of our private placement notes, together with interest accrued on such amount to be prepaid to the date of prepayment, plus any applicable prepayment compensation amount. The prepayment compensation amount for the Euro denominated private placement notes includes any net gain or loss realized by the lenders on swap transactions entered into by the lenders under which the lenders would receive payment in U.S. dollars in exchange for scheduled Euro payments of principal and interest on the Euro denominated private placement notes by the Company to the lenders, adjusted for theoretical lender returns foregone on hypothetical reinvestments in U.S. Treasury securities. However, in the case of an event of default as defined in the loan documents, including a change in control event, the prepayment compensation amount will not be less than zero. Depending on the movement of foreign exchange rates over the terms of the Euro denominated private placement notes, such payments could have a material adverse effect on our business, financial condition, results of operations, and cash flows and could significantly reduce stockholder benefits from a change of control event.

Additional tax expense or additional tax exposures could affect our future profitability.

Approximately 17%, in fiscal year 2018, and 24%, in fiscal year 2017, of our earnings before income taxes was earned in jurisdictions outside the United States. Accordingly, we are subject to income taxes in both the United States and various non-U.S. jurisdictions. Our tax liabilities are dependent upon the distribution mix of operating income among these different jurisdictions. Our tax expense includes estimates of additional tax that may be incurred and reflects various estimates, projections, and assumptions that could impact the valuation of our deferred tax assets and liabilities. Our future operating results could be adversely affected by changes in the effective tax rate, which could be caused by, among other things:

- changes in the mix of earnings in countries with differing statutory tax rates;
- changes in our overall profitability;
- changes in tax legislation and tax rates;
- changes in tax incentives;
- changes in U.S. GAAP;
- changes in the projected realization of deferred tax assets and liabilities;
- changes in management's assessment of the amount of earnings indefinitely reinvested offshore; and
- the results of audits and examinations of previously filed tax returns and continuing assessments of our tax exposures.

On December 22, 2017, the United States enacted significant changes to the U.S. tax law following the passage and signing of H.R.1, "An Act to Provide for Reconciliation Pursuant to Titles II and V of the Concurrent Resolution on the Budget for Fiscal Year 2018" (the "Tax Act") (previously known as "The Tax Cuts and Jobs Act"). The Tax Act contains many significant changes to the U.S. federal tax laws, the consequences of which have not yet been fully determined. Legislative or regulatory measures by states or non-U.S. governments in response to the Tax Act or otherwise, or rules and interpretations under the Tax Act, further changes in corporate tax rates, the realizability of the deferred tax assets and/or liabilities relating to our U.S. operations, the taxation of foreign earnings, and the deductibility of expenses (such as executive compensation) contained in the Tax Act or other tax reform legislation could have a material impact on the value of our deferred tax assets and/or liabilities, could result in significant charges in the current or future taxable years, and could increase our future U.S. tax expense. Furthermore, changes to the taxation of undistributed foreign earnings could change our future intentions regarding the reinvestment of such earnings. The foregoing items could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We derive a significant portion of our revenues from sales to countries outside the United States and purchase raw materials and components from suppliers outside of the United States; therefore, we are subject to the risks inherent in doing business in other countries.

In 2018, approximately 42% of our total sales were made to customers in jurisdictions outside of the United States (including products manufactured in the United States and sold outside the United States as well as products manufactured in international locations), including approximately 9% of our total sales to Brazil, Russia, India and China, known as the "BRIC" countries. We also purchase raw materials and components from suppliers outside the United States.

Accordingly, our business and results of operations are subject to risks associated with doing business internationally, including:

- fluctuations in foreign exchange rates;
- limitations on repatriation of earnings;
- transportation delays and interruptions;
- political, social and economic instability and disruptions;
- government embargos or trade restrictions;

- the imposition of taxes, import and export controls, duties and tariffs, embargoes, sanctions and other trade barriers;
- changes in labor conditions;
- changes in regulatory environments;
- the potential for nationalization of enterprises;
- difficulties in staffing and managing multi-national operations;
- limitations on the Company’s ability to enforce legal rights and remedies, including protection of intellectual property;
- difficulty of enforcing agreements and collecting receivables through some foreign legal systems;
- acts of terrorism or war;
- potentially adverse tax consequences; and
- difficulties in implementing restructuring actions on a timely basis.

The imposition of tariffs can have significant implications on the cost and supply of certain commodities used in both of our reporting segments. Over the longer term, if tariffs were to remain in place, there could be significant impact on costs and our ability to pass increased costs along to our customers, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We are also subject to U.S. laws prohibiting companies from doing business in certain countries, or restricting the type of business that may be conducted in these countries. The cost of compliance with increasingly complex and often conflicting regulations governing various matters worldwide, including foreign investment, employment, import, export, business acquisitions, environmental and taxation matters, land use rights, property, and other matters, can also impair our flexibility in modifying product, marketing, pricing or other strategies for growing our businesses, as well as our ability to improve productivity and maintain acceptable operating margins. We must also comply with restrictions on exports imposed under the U.S. Export Control Laws and Sanctions Programs. These laws and regulations change from time to time and may restrict foreign sales.

In 2018, approximately 6% of our total sales were recorded in China and we have operations in China. Certain of our independent registered public accounting firm's audit documentation related to their audit report included in this annual report may be located in the China. The Public Company Accounting Oversight Board ("PCAOB") currently cannot inspect audit documentation located in China and, as such, prevents the PCAOB from regularly evaluating audit work of any auditors that was performed in China, including that performed by our independent auditors in China. As a result, investors may be deprived of the full benefits of PCAOB oversight of our global audits via their inspections. The inability of the PCAOB to conduct inspections of audit work performed in China makes it more difficult to evaluate the effectiveness of our Chinese independent auditor's audit procedures as compared to auditors in other jurisdictions that are subject to PCAOB inspections on all of their work.

Sales and purchases in currencies other than the U.S. dollar expose us to fluctuations in foreign currencies relative to the U.S. dollar. These exposures may change over time as our business and business practices evolve, and they could have a material adverse effect on our financial results and cash flows. An increase in the value of the U.S. dollar could increase the real cost to our customers of our products in those markets outside the United States where we sell in U.S. dollars, and a weakened U.S. dollar could increase the cost of local operating expenses and procurement of raw materials to the extent that we must purchase components in foreign currencies. Foreign currency exchange rate risk is reduced through several means, including the maintenance of local production facilities in the markets served, invoicing of customers in the same currency as the source of the products, and prompt settlement of inter-company balances utilizing a global netting system. While we monitor our exchange rate exposures and seek to reduce the risk of volatility, our actions may not be successful in significantly mitigating such volatility.

Of the $83,594 of cash and cash equivalents held at September 30, 2018, $77,065 was held by our foreign locations. We are not presently aware of any significant restrictions on the repatriation of these funds, although a portion is considered indefinitely reinvested in these foreign subsidiaries. If these funds were needed to fund our operations or satisfy obligations in the United States, then they could be repatriated and their repatriation into the United States may cause us to incur additional U.S. income taxes or foreign withholding taxes. Any additional U.S. taxes could be offset, in whole or in part, by foreign tax credits. The amount of such taxes and application of tax credits would be dependent on the income tax laws and other circumstances at the time these amounts are repatriated. Based on these variables, it is impractical to determine the income tax liability that might be incurred if these funds were to be repatriated. The additional uncertainty associated with the Tax Act increases the impracticality of determining this income tax liability.

In addition, uncertain global economic conditions arising from circumstances such as slowing growth in emerging regions could result in reduced customer confidence and decreased demand for our products and services, disruption in payment patterns and higher default rates, a tightening of credit markets, increased risk regarding supplier performance, increased counterparty risk with respect to the financial institutions with which we do business, and exchange rate fluctuations. While we employ comprehensive controls regarding global cash management to guard against cash or investment loss and to ensure our ability to fund our operations and commitments, a material disruption to the financial institutions with whom we transact business could have a material adverse effect on our international operations or on our business, financial condition, results of operations, and cash flows.

Political and economic uncertainty in the European Union could adversely impact our business, results of operations, financial condition and prospects.

Credit rating downgrades in certain European countries and/or speculation regarding changes to the composition or viability of the European Union ("EU") create uncertain global economic conditions. On June 23, 2016, the United Kingdom ("UK") voted to leave the EU. The UK's vote to voluntarily exit from the EU, generally referred to as the "Brexit," triggered short-term financial volatility, including a decline in the value of the Great Britain Pound ("GBP") in comparison to both the U.S. dollar ("USD") and the European Union countries' Euro ("EUR"). In addition, discussions and negotiations to determine the future terms of the UK's relationship with the EU are ongoing, and the legal and regulatory framework that will be applicable in the UK may change. The ongoing uncertainty could have a negative economic impact and result in further volatility in the markets for several years. The impact of the Brexit referendum and such ongoing uncertainty may result in various economic and financial consequences for businesses operating in the UK, the EU and beyond.

We derive a significant portion of our revenues from non-U.S. sales and are subject to the risks inherent in doing business in other countries, including the UK. During fiscal year 2018, approximately 3% of our consolidated net sales were invoiced to customers in the UK through both our Aerospace and Industrial reportable segments. Approximately 24% of our consolidated net sales were invoiced to customers in Europe overall. Woodward and its various subsidiaries hold financial assets and liabilities denominated in GBP and EUR, including cash and cash equivalents, accounts receivable, postretirement defined benefit pension plan assets and liabilities, and accounts payable, and the future impacts of the Brexit and the continued uncertainty surrounding the EU could have a material impact on our business, financial condition, results of operations and cash flows.

Changes in the estimates of fair value of reporting units or of long-lived assets, particularly goodwill, may result in future impairment charges, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Over time, the fair values of long-lived assets change. At September 30, 2018, we had $813,250 of goodwill, representing 21% of our total assets. We test goodwill for impairment at the reporting unit level on an annual basis as of July 31 of each year and more often if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. Based on the relevant U.S. GAAP authoritative guidance, we aggregate components of a single operating segment into a reporting unit, if appropriate. Future goodwill impairment charges may occur if estimates of fair values decrease, which would reduce future earnings. We test our indefinite lived intangible asset on an annual basis and more often if an event occurs or circumstances change that would more likely than not reduce the fair value of the indefinite lived intangible asset below its carrying amount. We also test property, plant, and equipment and other intangibles for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Future asset impairment charges may occur if asset utilization declines, if customer demand decreases, or for a number of other reasons, which would reduce future earnings. Any such impairment charges could have a material adverse effect on our business, financial condition, results of operations, and cash flows. Impairment charges would also reduce our consolidated stockholders' equity and increase our debt-to-total-capitalization ratio, which could negatively impact our credit rating and access to the debt and equity markets.

During the fourth quarter of fiscal year 2018, we completed our fiscal year 2018 annual goodwill impairment test. In performing the annual goodwill impairment test, we determined it was appropriate to aggregate certain components of the same operating segment into a single reporting unit. The identification of reporting units and consideration of aggregation criteria requires management's judgment. Further, we use the income approach based on a discounted cash flow method that incorporates various estimates and assumptions. The results of our fiscal year 2018 annual goodwill impairment test performed as of July 31, 2018 indicated the estimated fair values of each of our reporting units were in excess of their carrying amounts, and accordingly, no impairment existed. There can be no assurance that our estimates and assumptions of the fair value of our reporting units, the current economic environment, or the other inputs used in forecasting the present value of forecasted cash flows used to estimate the fair value of our reporting units will prove to be accurate projections of future performance, and any material error in our estimates and assumptions, could result in us needing to take a material impairment charge, which would have the effects discussed above.

As part of our ongoing monitoring efforts, we will continue to consider the global economic environment and its potential impact on our businesses, as well as other factors, in assessing goodwill and other long-lived assets for possible indications of impairment.

Our manufacturing activities may result in future environmental costs or liabilities.

We use hazardous materials and/or regulated materials in our manufacturing operations. We also own, operate, have acquired, and may in the future acquire facilities that were formerly owned and operated by others that used such materials. The risk that a significant release of regulated materials has occurred in the past or will occur in the future cannot be completely eliminated or prevented. As a result, we are subject to a substantial number of costly regulations. In particular, we are required to comply with increasingly stringent requirements of federal, state, and local environmental, occupational health and safety laws and regulations in the United States, the EU, and other territories, including those governing emissions to air, discharges to water, noise and odor emissions, the generation, handling, storage, transportation, treatment and disposal of waste materials, and the cleanup of contaminated properties and human health and safety. Compliance with these laws and regulations results in ongoing costs. We cannot be certain that we have been, or will at all times be, in complete compliance with all environmental requirements, or that we will not incur additional material costs or liabilities in connection with these requirements. In addition, we may be exposed to other environmental costs such as participation in superfund sites or other similar jurisdictional initiatives.

As a result, we may incur material costs or liabilities or be required to undertake future environmental remediation activities that could damage our reputation and have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Our financial and operating performance depends on continued access to a stable workforce and on favorable labor relations with our employees.

Certain of our operations in the United States and internationally involve different employee/employer relationships and the existence of works' councils. In addition, approximately 21% of our workforce in the United States is unionized, and is expected to remain unionized for the foreseeable future. Competition for technical personnel in the industries in which we compete is intense. Our future success depends in part on our continued ability to hire, train, assimilate, and retain qualified personnel. There is no assurance that we will continue to be successful in recruiting qualified employees in the future. Further, we periodically need to renegotiate our collective bargaining agreements, and any failure to negotiate new agreements or extensions in a timely manner could result in work stoppages or slowdowns. Any significant increases in labor costs, deterioration of employee relations, including any conflicts with works' councils or unions, or slowdowns or work stoppages at any of our locations, whether due to employee turnover, changes in availability of qualified technical personnel, or otherwise, could have a material adverse effect on our business, our relationships with customers, and our financial condition, results of operations, and cash flows.

Our operations and suppliers may be subject to physical and other risks, including natural disasters that could disrupt production and have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our operations include principal facilities in the United States, China, Germany, and Poland. In addition, we operate sales and service facilities in Brazil, Bulgaria, India, Japan, the Netherlands, the Republic of Korea and the UK. We also have suppliers for materials and parts inside and outside the United States. Our operations and sources of supply could be disrupted by unforeseen events, including fires, tornadoes, tsunamis, hurricanes, earthquakes, floods and other forms of severe weather in countries in which we operate or in which our suppliers are located, any of which could adversely affect our operations and financial performance. Natural disasters, public health concerns, war, political unrest, terrorist activity, equipment failures, power outages, or other unforeseen events could result in physical damage to, and complete or partial closure of, one or more of our manufacturing facilities, or could cause temporary or long-term disruption in the supply of component products from some local and international suppliers, disruption in the transport of our products and significant delays in the shipment of products and the provision of services, which could in turn cause the loss of sales and customers. Existing insurance arrangements may not provide protection for all of the costs that may arise from such events. Accordingly, disruption of our operations or the operations of a significant supplier could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Our intellectual property rights may not be sufficient to protect all our products or technologies and we may, regardless of intent, infringe on the intellectual property rights of others.

Our success depends in part on our ability to obtain patents or rights to patents, protect trade secrets and know-how, and prevent others from infringing on our patents, trademarks, and other intellectual property rights. Some of our intellectual property is not covered by patents (or patent applications) and includes trade secrets and other know-how that is not patentable or for which we have elected not to seek patent protection, including intellectual property relating to our manufacturing processes and engineering designs. We will be able to protect our intellectual property from unauthorized use by third parties only to the extent that it is covered by valid and enforceable patents, trademarks, licenses or other valid intellectual property rights. Patent protection generally involves complex legal and factual questions and, therefore, enforceability of patent rights cannot be predicted with certainty; thus, any patents that we own or license from others may not provide us with adequate protection against competitors. Moreover, the laws of certain foreign jurisdictions do not recognize intellectual property rights or protect them to the same extent as do the laws of the United States. Additionally, our commercial success depends significantly on our ability to operate without infringing upon the patent and other proprietary rights of others. Our current or future technologies may, regardless of our intent, infringe upon the patents or violate other proprietary rights of third parties. In the event of such infringement or violation, we may face expensive litigation or indemnification obligations and may be prevented from selling existing products and pursuing product development or commercialization. If we are unable to sufficiently protect our patent and other proprietary rights or if we infringe on the patent or proprietary rights of others, our business, financial condition, results of operations, and cash flows could be materially adversely affected.

Amounts accrued for contingencies may be inadequate to cover the amount of loss when the matters are ultimately resolved.

In addition to intellectual property and product liability matters, we are currently involved or may become involved in claims, pending or threatened litigation or other legal proceedings, investigations or regulatory proceedings regarding employment or other regulatory, legal, or contractual matters arising in the ordinary course of business. There is no certainty that the results of these matters will be favorable to the Company. We accrue for known individual matters if we believe it is probable that the matter will result in a loss when ultimately resolved using estimates of the most likely amount of loss. There may be additional losses that have not been accrued, or liabilities may exceed our estimates, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-bribery laws and regulations.

The U.S. Foreign Corrupt Practices Act ("FCPA") and similar anti-bribery laws and regulations in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to non-U.S. government officials for the purpose of obtaining or retaining business or securing an improper business advantage. Our policies mandate compliance with these anti-bribery laws. However, we operate in many parts of the world and sell to industries that have experienced corruption to some degree. If we are found to be liable for FCPA or other similar anti-bribery law or regulatory violations, whether due to our or others' actions or inadvertence, we could be subject to civil and criminal penalties or other sanctions that could have a material adverse impact on our business, financial condition, results of operations and cash flows.

Our net postretirement benefit obligation liabilities may increase, and the fair value of our pension plan assets may decrease, which could require us to make additional and/or unexpected cash contributions to our pension plans, increase the amount of postretirement benefit expenses, affect our liquidity or affect our ability to comply with the terms of our outstanding debt arrangements.

Accounting for retirement, pension and postretirement benefit obligations and related expense requires the use of assumptions, including a weighted-average discount rate, an expected long-term rate of return on assets, a net healthcare cost trend rate, and projected mortality rates, among others. Benefit obligations and benefit costs are sensitive to changes in these assumptions. As a result, assumption changes could result in increases in our obligation amounts and expenses. If interest rates decline, the present value of our postretirement benefit plan liabilities may increase faster than the value of plan assets, resulting in significantly higher unfunded positions in some of our pension plans. As of September 30, 2018, we had $227,722 in invested pension plan assets. Investment losses may result in decreases to our pension plan assets.

Funding estimates are based on certain assumptions, including discount rates, interest rates, mortality, fair value of assets and expected return on plan assets and are subject to changes in government regulations in the countries in which our employees work. Volatility in the financial markets may impact future discount and interest rate assumptions. Significant changes in investment performance or a change in the portfolio mix of invested assets can result in increases or decreases in the valuation of plan assets or in a change of the expected rate of return on plan assets. Also, new accounting standards on fair value measurement may impact the calculation of future funding levels. We periodically review our assumptions, and any such revision can significantly change the present value of future benefits, and in turn, the funded status of our pension plans and the resulting periodic pension expense. Changes in our pension benefit obligations and the related net periodic costs or credits may occur as a result of variances of actual results from our assumptions, and we may be required to make additional cash contributions in the future beyond those which have been estimated.

In addition, our revolving credit facility and note purchase agreements contain continuing covenants and events of default regarding our pension plans, including provisions regarding the unfunded liabilities related to those pension plans. See the discussion above concerning "Our debt obligations and the restrictive covenants in the agreements governing our debt could limit our ability to operate our business or pursue our business strategies, and could adversely affect our business, financial condition, results of operations, and cash flows."

To the extent that the present values of benefits incurred for pension obligations are greater than values of the assets supporting those obligations or if we are required to make additional or unexpected contributions to our pension plans for any reason, our ability to comply with the terms of our outstanding debt arrangements, and our business, financial condition, results of operations, and cash flows may be adversely affected.

Our business operations may be adversely affected by information systems interruptions or intrusion.

We are dependent on various information systems throughout our company to administer, store and support multiple business activities. If these systems are damaged, cease to function properly or are subject to cybersecurity attacks, such as unauthorized access, malicious software and other violations, we could experience production downtimes, operational delays, other detrimental impacts on our operations or ability to provide products and services to our customers, the compromising of confidential or otherwise protected information, destruction or corruption of data, security breaches, other manipulation or improper use of our systems or networks, financial losses from remedial actions, loss of business or potential liability, and/or damage to our reputation, any of which could have a material adverse effect on our business, financial condition, results of operations, and cash flows. While we attempt to mitigate these risks by employing a number of measures, including technical security controls, employee training, comprehensive monitoring of our networks and systems, and maintenance of backup and protective systems, our systems, networks, products, solutions and services remain potentially vulnerable to additional known or unknown threats.

Our financial statements are subject to changes in accounting standards that could adversely impact our profitability or financial position.

Our financial statements are subject to the application of U.S. GAAP, which are periodically revised and/or expanded. Accordingly, from time to time, we are required to adopt new or revised accounting standards issued by recognized authoritative bodies, including the Financial Accounting Standards Board ("FASB"). Recently, the FASB revised the accounting standards related to revenue recognition and lease accounting. The impact of accounting pronouncements that have been issued but not yet implemented is disclosed in our annual and quarterly reports on Form 10-K and Form 10-Q to the extent the impact is known. An assessment of proposed standards is not provided, as such proposals are subject to change through the exposure process and, therefore, their effects on our financial statements cannot be fully assessed at this time. It is possible that future accounting standards we are required to adopt could change the current accounting treatment that we apply to our consolidated financial statements and that such changes could have a material adverse effect on our reported results of operations and financial position. Additionally, any inability by the Company to timely and properly implement such changes could have a material adverse effect on our ability to timely file future financial statements upon adoption of, and in accordance with, such new accounting standards, which could have a material adverse effect on our business and negatively affect our share price.

Industry Risks

Unforeseen events may occur that significantly reduce commercial aviation, which could adversely affect our business, financial condition and results of operations.

A significant portion of our business is related to commercial aviation. Global economic downturn and uncertainty in the marketplace typically lead to a general reduction in demand for air transportation services, leading some airlines to withdraw aircraft from service, which negatively affects sales of our aerospace components and services. These economic conditions can similarly affect our sales of systems and components for new business jet aircraft. The commercial airline industry tends to be cyclical and capital spending by airlines and aircraft manufacturers may be influenced by a variety of factors, including current and future traffic levels, aircraft fuel pricing, labor issues, competition, the retirement of older aircraft, regulatory changes, terrorism and related safety concerns, general economic conditions, worldwide airline profits and backlog levels. In the event these or other economic indicators stagnate or worsen, market demand for our components and systems could be negatively affected by renewed reductions in demand for air transportation services or commercial airlines' financial difficulties, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

The U.S. Government may change acquisition priorities and/or reduce spending, which could adversely affect our business, financial condition and results of operations.

The U.S. Government participates in a wide variety of operations, including homeland defense, counterinsurgency, counterterrorism, and other defense-related operations that employ our products and services. U.S. defense spending has historically been cyclical in nature, and defense budgets tend to rise when perceived threats to national security increase the level of concern over the country's safety. The U.S. Government continues to adjust its funding priorities in response to changes in the perceived threat environment, the political environment, and changes in budgetary priorities. In addition, defense spending currently faces pressures due to the overall economic and political environment, budget deficits, and competing budget priorities. A decrease in U.S. Government defense spending or changes in the spending allocation could result in one or more of our programs being reduced, delayed, or terminated.

Shifts in domestic and international spending and tax policy, changes in security, defense, and intelligence priorities, changes in government budget appropriations, general and political economic conditions and developments, and other factors may affect a decision to fund, or the level of funding for, existing or proposed programs. If the priorities of the U.S. Government change and/or defense spending is reduced, this may adversely affect our business, financial condition, results of operations, and cash flows.

Increasing emission standards that drive certain product sales may be eased or delayed, which could reduce our competitive advantage.

We sell components and systems that have been designed to meet strict emission standards, including standards that have not yet been implemented but are expected to be implemented soon. If these emission standards are eased, developed products may become unnecessary and/or our future sales could be lower as potential customers select alternative products or delay adoption of our products, which would have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Natural gas prices may increase significantly and disproportionately to other sources of fuels used for power generation, which could reduce our sales and adversely affect our business, financial condition and results of operations.

Commercial producers of electricity use many of our components and systems, most predominately in their power plants that use natural gas as their fuel source. Commercial producers of electricity are often in a position to manage the use of different power plant facilities and make decisions based on operating costs. Compared to other sources of fuels used for power generation, natural gas prices have increased slower than fuel oil, but about the same as coal. This increase in natural gas prices and any future increases, whether in absolute dollars or relative to other fuel costs such as oil, could impact the sales mix of our components and systems, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Long-term reduced commodity prices for oil, natural gas, and other minerals may depress the markets for certain of our products and services, particularly those from our Industrial segment.

Many of our Industrial segment OEM and aftermarket customers and our Aerospace segment rotorcraft product lines' customers provide goods and services that support various industrial extraction activities, including mining, oil and gas exploration and extraction, and transportation of raw materials from extraction sites to refineries and/or processing facilities. Long-term lower prices for commodities such as oil, natural gas, gold, tin, and various other minerals could reduce exploration activities and place downward pressure on demand for our goods and services that support exploration and extraction activities.

Changes in government subsidy programs and regulatory requirements may result in decreased demand for our products.

The U.S. Government, as well as various foreign governments, provide for various stimulus programs or subsidies, such as grants, loan guarantees and tax incentives, relating to renewable energy, alternative energy, energy efficiency and electric power infrastructure. Some of these programs have expired, which may affect the economic feasibility or timing of future projects. Additionally, while a significant amount of stimulus funds and subsidies are available to support various projects, we cannot predict the timing and scope of any investments to be made by our customers under stimulus funding and subsidies or whether stimulus funding and subsidies will result in increased demand for our products. Investments for renewable energy, alternative energy and electric power infrastructure under stimulus programs and subsidies may not occur, may be less than anticipated or may be delayed, any of which would negatively impact demand for our products.

Other current and potential regulatory initiatives may not result in increased demand for our products. It is not certain whether existing regulatory requirements will create sufficient incentives for new projects, when or if proposed regulatory requirements will be enacted, or whether any potentially beneficial provisions will be included in the regulatory requirement.

Uncertainty with respect to government subsidy programs and regulatory requirements could cause decreased demand for our products as investments are delayed or become economically unfeasible, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Industry consolidation trends could reduce our sales opportunities, decrease sales prices, and drive down demand for our products.

There has been consolidation and there may be further consolidation in the aerospace, power, and process industries. The consolidation in these industries has resulted in customers with vertically integrated operations, including increased in-sourcing capabilities, which may result in economies of scale for those companies. If our customers continue to seek to control more aspects of vertically integrated projects, cost pressures resulting in further integration or industry consolidation could reduce our sales opportunities, decrease sales prices, and drive down demand for our products, which could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Investment Risks

The historic market price of our common stock may not be indicative of future market prices.

The market price of our common stock has fluctuated over time. Stock markets in general have experienced extreme price and volume volatility particularly over the past few years. The trading price of our common stock ranged from a high of $89.30 per share to a low of $68.56 per share during the twelve months ended September 30, 2018. The following factors, among others, could cause the price of our common stock in the public market to fluctuate significantly:

- general economic conditions, particularly in the aerospace, power generation and process and transportation industries;
- variations in our quarterly results of operation and whether or not we meet our guidance or the expectations of analysts and investors;
- a change in sentiment in the market regarding our operations or business prospects or the prospects of our competitors and the markets in which we operate;
- the addition or departure of key personnel; and
- announcements by us or our competitors of new business, acquisitions or joint ventures.

Fluctuations in our stock price often occur without regard to specific operating performance. The price of our common stock could fluctuate based upon the above factors or other factors, including those that have little to do with our company, and these fluctuations could be material.

The typical daily trading volume of our common stock may affect an investor's ability to sell significant stock holdings in the future without negatively affecting stock price.

As of September 30, 2018, we had 72,960 shares of common stock issued, of which 11,203 shares were held as treasury shares. In addition, stockholders who each own 5% or greater of our shares hold a total of approximately 23% of the outstanding shares of our common stock. During the fourth quarter of fiscal year 2018, the average daily trading volume of our stock was approximately 197 shares. While the level of trading activity will vary each day, our typical daily trading volume is relatively low and represents only a small percentage of total shares of stock outstanding. As a result, a stockholder who sells a significant number of shares of stock in a short period of time could negatively affect our share price.

Certain anti-takeover provisions of our charter documents and under Delaware law could discourage or prevent others from acquiring our company.

Our certificate of incorporation and bylaws contain provisions that:

- provide for a classified board;
- provide that directors may be removed only for cause by holders of at least two-thirds of the outstanding shares of common stock;
- authorize our board of directors to fill vacant directorships or to increase or decrease the size of our board of directors;
- permit us to issue, without stockholder approval, up to 10,000 shares of preferred stock, in one or more series and, with respect to each series, to fix the designation, powers, preferences and rights of the shares of the series;
- require special meetings of stockholders to be called by holders of at least two-thirds of the outstanding shares of common stock;
- prohibit stockholders from acting by written consent;
- require advance notice for stockholder proposals and nominations for election to the board of directors to be acted upon at meetings of stockholders; and
- require the affirmative vote of two-thirds of the outstanding shares of our common stock for amendments to our certificate of incorporation and certain business combinations, including mergers, consolidations, sales of all or substantially all of our assets or dissolution.

In addition, Section 203 of the Delaware General Corporation Law limits business combinations with owners of more than 15% of our stock that have not been approved by the board of directors. These provisions and other similar provisions make it more difficult for a third party to acquire us without negotiation. Our board of directors could choose not to negotiate a potential acquisition that it does not believe to be in our best interest. Accordingly, the potential acquirer could be discouraged from offering to acquire us, or could be prevented by the anti-takeover measures, from successfully completing a hostile acquisition.

Item 1B.Unresolved Staff Comments

None.

Item 2.Properties

Our principal plants are as follows:

United States

Duarte, California – Aerospace segment manufacturing and engineering

Fort Collins, Colorado (two plants) – Corporate headquarters and Aerospace and Industrial segment manufacturing and engineering

Greenville, South Carolina (leased) –Industrial segment manufacturing and Aerospace and Industrial segments engineering

Loveland, Colorado –Industrial segment manufacturing and Aerospace and Industrial segments engineering

Niles, Illinois – Aerospace segment manufacturing and engineering

Rockford, Illinois (two plants) – Aerospace segment manufacturing and engineering

Santa Clarita, California – Aerospace segment manufacturing and engineering

Zeeland, Michigan – Aerospace segment manufacturing and engineering

Other Countries

Aken, Germany (leased) –Industrial segment manufacturing and engineering

Glatten, Germany – Industrial segment manufacturing

Kempen, Germany – Industrial segment manufacturing and engineering

Krakow, Poland – Industrial segment manufacturing and Aerospace and Industrial segments engineering

Stuttgart, Germany – (two plants; one leased) Industrial segment engineering

Tianjin, Peoples' Republic of China (leased) –Industrial segment assembly

In addition to the principal plants listed above, we own or lease other facilities used primarily for sales, service activities, assembly, and/or engineering activities in Brazil, Bulgaria, China, India, Japan, the Netherlands, the Republic of Korea, the United Kingdom, Germany, and the United States.

In the second quarter of fiscal year 2018, the Company announced its decision to relocate its Duarte, California operations to the Company's newly renovated Drake Campus in Fort Collins, Colorado.

Our principal plants are suitable and adequate for the manufacturing and other activities performed at those plants, and we believe our utilization levels are generally high.

Item 3.Legal Proceedings

Woodward is currently involved in claims, pending or threatened litigation or other legal proceedings, investigations and/or regulatory proceedings arising in the normal course of business, including, among others, those relating to product liability claims, employment matters, worker's compensation claims, contractual disputes, product warranty claims and alleged violations of various laws and regulations. Woodward accrues for known individual matters using estimates of the most likely amount of loss where it believes that it is probable the matter will result in a loss when ultimately resolved and such loss is reasonably estimable.

While the outcome of pending claims, legal and regulatory proceedings, and investigations cannot be predicted with certainty, management believes that any liabilities that may result from these claims, proceedings and investigations will not have a material effect on Woodward's liquidity, financial condition, or results of operations.

Item 4.Mine Safety Disclosures

Not applicable.

PART II

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

Our common stock is listed on The NASDAQ Global Select Market and is traded under the symbol “WWD.” At November 2, 2018, there were approximately 900 holders of record.

Performance Graph

The following graph compares the cumulative 10-year total return to stockholders on our common stock relative to the cumulative total returns of the S&P Midcap 400 index and the S&P Industrials index. The graph shows total stockholder return assuming an investment of $100 (with reinvestment of all dividends) was made on September 30, 2008 in our common stock and in each of the two indexes and tracks relative performance through September 30, 2018. We have used a period of 10 years as we believe that our stock performance should be reviewed over a period that is reflective of our long-term business cycle.

	9/08	9/09	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18
Woodward, Inc.	$ 100.00	$ 69.57	$ 93.80	$ 79.92	$ 99.88	$ 121.05	$ 142.20	$ 122.48	$ 189.60	$ 237.22	$ 248.94
S&P Midcap 400	100.00	96.89	114.11	112.66	144.81	184.89	206.73	209.62	241.75	284.10	324.46
S&P Industrials	100.00	87.30	104.27	99.47	128.92	165.67	193.47	186.41	223.20	273.10	303.63

The stock price performance included in this graph is not necessarily indicative of future stock price performance.

Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities (In thousands, except for shares and per share amounts)	Total Number of Shares Purchased	Weighted Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)	Maximum Number (or Approximate Dollar Value) of Shares that may yet be Purchased under the Plans or Programs at Period End (1)
July 1, 2018 through July 31, 2018 (2)	264	$ 83.21	-	$ 428,803
August 1, 2018 through August 31, 2018 (2)	-	-	-	428,803
September 1, 2018 through September 30, 2018 (2)	355	80.86	-	428,803

(1) In November 2016, our Board of Directors terminated the Company's prior stock repurchase program and replaced it with a new program for the purchase of up to $500,000 of Woodward's outstanding shares of common stock on the open market or in privately negotiated transactions over a three-year period that will end in 2019.

(2) Under a trust established for the purposes of administering the Woodward Executive Benefit Plan, 264 shares of common stock were acquired in July 2018 on the open market related to the deferral of compensation by certain eligible members of Woodward's management who irrevocably elected to invest some or all of their deferred compensation in Woodward common stock. In addition, 355 shares of common stock were acquired in September 2018 on the open market related to the reinvestment of dividends for shares of treasury stock held for deferred compensation. Shares owned by the trust, which is a separate legal entity, are included in "Treasury stock held for deferred compensation" in the Consolidated Balance Sheets.

Item 6. Selected Financial Data

The following selected financial data should be read in conjunction with the Consolidated Financial Statements and related notes which appear in "Item 8 – Financial Statements and Supplementary Data" of this Form 10-K.

	Year Ended September 30,				
	2018	2017	2016	2015	2014
	(In thousands except per share amounts)				
Net sales (1)	$ 2,325,873	$ 2,098,685	$ 2,023,078	$ 2,038,303	$ 2,001,240

Net earnings (1)(2)(3)(4)(5)	180,378	200,507	180,838	181,452	165,844
Earnings per share:					
Basic earnings per share	2.93	3.27	2.92	2.81	2.50
Diluted earnings per share	2.82	3.16	2.85	2.75	2.45
Cash dividends per share	0.553	0.485	0.430	0.380	0.320
Income taxes (5)	39,200	52,240	45,648	59,497	61,400
Interest expense	31,770	27,430	26,776	24,864	22,804
Interest income	1,674	1,725	2,025	787	271
Depreciation expense	71,389	55,140	41,550	45,994	43,773
Amortization expense	44,742	25,777	27,486	29,241	33,580
Capital expenditures	127,140	92,336	175,692	286,612	207,106
Weighted-average shares outstanding:					
Basic shares outstanding	61,493	61,366	61,893	64,684	66,432
Diluted shares outstanding	63,876	63,512	63,556	66,056	67,776

	At September 30,				
	2018	2017	2016	2015	2014
	(Dollars in thousands)				
Working capital	$ 523,619	$ 593,955	$ 463,811	$ 579,211	$ 627,981
Total assets	3,790,649	2,757,109	2,642,362	2,512,404	2,358,603
Long-term debt, less current portion (6)	1,092,397	580,286	577,153	848,488	708,110
Total debt (6)	1,246,032	612,886	727,153	850,918	708,110
Total liabilities (7)	2,252,545	1,385,726	1,429,767	1,359,300	1,197,659
Stockholders' equity	1,538,104	1,371,383	1,212,595	1,153,104	1,160,944
Full-time worker members	8,277	6,829	6,852	6,955	6,701

Notes:

1. On June 1, 2018, Woodward and its wholly-owned subsidiary, Woodward Aken GmbH acquired from Rolls-Royce PLC all of the outstanding shares of stock of L'Orange GmbH, together with its wholly-owned subsidiaries in China and Germany, as well as all of the outstanding equity interests of its affiliate, Fluid Mechanics LLC, and their related operations (collectively, "L'Orange"). As L'Orange was acquired during the third quarter of fiscal year 2018, net sales for fiscal year 2018 included $102,905 of sales from L'Orange during the period June 1, 2018 through September 30, 2018.
2. In the second quarter of fiscal year 2018, Woodward recorded restructuring charges, net of tax, totaling $12,674, the majority of which relate to the Company's decision to relocate its Duarte, California operations to the Company's newly renovated Drake Campus in Fort Collins, Colorado. The remaining restructuring charges recognized during the second quarter of fiscal year 2018 consist of workforce management costs related to aligning the Company's industrial turbomachinery business with current market conditions.
3. In fiscal year 2018, Woodward recorded total charges, net of tax, of $42,018 related to (i) move costs associated with the relocation of our Duarte, California operations to the Company's newly renovated Drake Campus in Fort Collins, Colorado (ii) the purchase accounting impacts recognized in cost of goods sold related to the revaluation of the L'Orange inventory and the amortization of the backlog intangible, (iii) the transaction and integration costs associated with the acquisition of L'Orange, (iv) cost associated with an at-the-money-forward option, (v) warranty and indemnity insurance costs associated with the acquisition of L'Orange, and (vi) German real estate transfer tax costs associated with the acquisition of L'Orange.
4. In the first quarter of fiscal year 2016, Woodward recorded special charges, net of tax, totaling approximately $10,478 related to its efforts to consolidate facilities, reduce costs and address current market conditions.
5. In fiscal year 2018, Woodward recognized a tax expense of $10,860, or $0.18 and $0.17 per basic and diluted share, respectively, related to the transition impacts of the change in U.S. tax legislation in December 2017. In fiscal year 2016, Woodward recognized a tax benefit of $6,500, or $0.10 per basic and diluted share, related to the retroactive impact of the permanent reinstatement of the U.S. research and experimentation credit ("R&E Credit") pertaining to fiscal year 2015. In fiscal year 2015, Woodward recognized a tax benefit of $5,818, or $0.09 per basic and diluted share, related to the retroactive impact of the reinstatement of the R&E Credit pertaining to fiscal year 2014.
6. In addition to the use of cash on hand, to finance the acquisition of L'Orange, in May 2018 Woodward issued an aggregate principal amount of $400,000 of senior unsecured notes in a series of private placement transactions and borrowed $167,420 under its existing revolving credit agreement.
7. On January 4, 2016, Woodward and General Electric Company ("GE"), acting through its GE Aviation business unit, consummated the formation of a strategic joint venture between Woodward and GE (the "JV"). Woodward determined that the JV formation was not the culmination of an earnings event because Woodward has significant performance obligations to support the future operations of the JV. Therefore, Woodward recorded the $250,000 consideration received from GE for its purchase of a 50% equity interest in the JV as deferred income. The $250,000 deferred income will be recognized as an increase to net sales in proportion to revenue realized on sales of applicable fuel systems within the scope of the JV in a particular period as a percentage of total revenue expected to be realized by Woodward over the estimated remaining lives of the underlying commercial aircraft

engine programs assigned to the JV. Total liabilities include $242,387 as of September 30, 2018, $243,347 as of September 30, 2017, and $244,739 as of September 30, 2016 of unamortized deferred income realized related to the JV formation.

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

OVERVIEW

Woodward enhances the global quality of life and sustainability by optimizing energy use through improved efficiency and lower emissions. We are an independent designer, manufacturer, and service provider of energy control and optimization solutions. We design, produce and service reliable, efficient, low-emission, and high-performance energy control products for diverse applications in challenging environments. We have production and assembly facilities in the United States, Europe and Asia, and promote our products and services through our worldwide locations.

Our strategic focus is providing energy control and optimization solutions for the aerospace and industrial markets. The precise and efficient control of energy, including motion, fluid, combustion and electrical energy, is a growing requirement in the markets we serve. Our customers look to us to optimize the efficiency, emissions and operation of power equipment in both commercial and defense operations. Our core technologies leverage well across our markets and customer applications, enabling us to develop and integrate cost-effective and state-of-the-art fuel, combustion, fluid, actuation and electronic systems. We focus primarily on serving OEMs and equipment packagers, partnering with them to bring superior component and system solutions to their demanding applications. We also provide aftermarket repair, maintenance, replacement and other service support for our installed products.

Our components and integrated systems optimize performance of commercial aircraft, defense aircraft, military ground vehicles and other equipment, gas and steam turbines, wind turbines, including converters and power grid related equipment, industrial diesel, gas, bio-diesel and dual-fuel reciprocating engines, and electrical power systems. Our innovative motion, fluid, combustion and electrical energy control systems help our customers offer more cost-effective, cleaner, and more reliable equipment.

Management’s discussion and analysis should be read together with the Consolidated Financial Statements and Notes included in this report. Dollar and number of share amounts contained in this discussion and elsewhere in this Annual Report on Form 10-K are in thousands, except per share amounts.

L’Orange Acquisition

On April 8, 2018, we entered into a Share Purchase Agreement (the “L’Orange Agreement”) with MTU Friedrichshafen GmbH (“MTU”) and MTU America Inc. (together with MTU, the “Sellers”), both of which were subsidiaries of Rolls-Royce PLC (“Rolls-Royce”). Pursuant to the L’Orange Agreement, we agreed to acquire all of the outstanding shares of stock of L’Orange GmbH, together with its wholly-owned subsidiaries in China and Germany, as well as all of the outstanding equity interests of its affiliate, Fluid Mechanics LLC, and their related operations (collectively, “L’Orange”), for total consideration (including cash consideration and the assumption of certain liabilities) of €700,000, or approximately $811,000 (the “L’Orange Acquisition”). The L’Orange Acquisition closed on June 1, 2018 (the “Closing”) and L’Orange became a wholly-owned subsidiary of the Company. L’Orange has been renamed Woodward L’Orange.

L’Orange is a supplier of fuel injection systems for industrial diesel, heavy fuel oil and dual-fuel engines. L’Orange supplies fuel injection technology for engines that power a wide range of industrial applications including marine power and propulsion systems, special-application off road vehicles, locomotives, oil and gas processing, and power generation. L’Orange serves many large specialist diesel engine manufacturers, including Rolls-Royce Power Systems’ subsidiaries, MTU and Bergen Engines, and other low to high speed engine builders. L’Orange has been integrated into the Company’s Industrial segment.

In connection with the Closing, MTU and a subsidiary of Rolls-Royce, and L’Orange, entered into a long-term supply agreement, dated June 1, 2018 (the “LTSA”). Pursuant to the terms of the LTSA, L’Orange will continue to supply to MTU and its affiliates within Rolls-Royce certain liquid fuel injection systems, injectors, pumps and other associated parts and components for industrial diesel, heavy fuel oil and dual-fuel engines in a manner consistent with the supply of such products prior to the transaction. The LTSA has an initial term that extends through December 31, 2032. During the term of the LTSA, MTU will continue to purchase certain of these products exclusively from L'Orange, subject to certain limitations specified therein, at pricing that has been negotiated at arms-length.

Financial information for L'Orange is reflected in our financial statements from the date of the Closing. As a result of this acquisition, a comparison of results for fiscal year 2018 to fiscal years 2017 and 2016 may not be particularly meaningful. References to "organic" sales relate to net sales of Woodward businesses excluding those attributable to L'Orange.

BUSINESS ENVIRONMENT AND TRENDS

We serve the aerospace and industrial markets.

Aerospace Markets

Our aerospace products and systems are primarily used to provide propulsion, actuation and motion control in both commercial and defense fixed-wing aircraft, rotorcraft, guided weapons, and other defense systems.

Commercial and Civil Aircraft – In the commercial aerospace markets, global air traffic continued to grow in fiscal year 2018. Commercial aircraft production increased as aircraft operators take delivery of next generation aircraft models that are required to meet the growing demand for passenger air travel as well as meet the demand for more fuel efficient and lower emission aircraft. The trend toward the newer generation of aircraft that have recently entered service or are scheduled to go into production over the next several years favors our product offerings because we have more content on those more fuel efficient and lower emission aircraft. We expect production levels to remain strong due to solid order backlogs for the new aircraft models. The business and general aviation market demand improved in 2018 as business jet deliveries were slightly up as a result of the introduction of some new models and improving corporate profitability. Turboprop and helicopter deliveries also improved from the weakness experienced in 2017. We expect business jet, turboprop and helicopter deliveries to continue improving in fiscal year 2019 due to improved economic conditions and, specific to helicopters, rising oil and gas prices giving rise to increased use in exploration and extraction.

We have content on the Airbus A320neo and A330neo, Bell 429, Boeing 737 MAX, 787, 747-8 and Bombardier CSeries (now majority owned by Airbus and renamed the A220). We have been awarded content on the 777X, Comac C919, Irkut MS-21 and a variety of business jet platforms, among others. We continue to explore opportunities on new engine and aircraft programs that are under consideration or have been recently announced.

Defense – The defense industry continues under the minimal-growth regime of the Budget Control Act of 2011 and related procurement reductions and delays. Although its full impact is uncertain, the National Defense Authorization Act for Fiscal Year 2019, which was signed into law in August 2018, is expected to result in higher levels of funding for procurement and research and development. Our involvement with a wide variety of defense programs in fixed-wing aircraft, rotorcraft and weapons systems has provided relative stability for our defense market sales, as some newer programs increase (e.g. F-35 Lightning II and KC-46A Tanker) while some legacy programs are reduced (e.g. F/A-18 E/F Super Hornet and V-22 Osprey). Other programs are relatively steady (e.g. UH-60 Black Hawk and A-64 Apache helicopter programs). We have significant motion control system content for the refueling boom on the KC-46A, which enters low rate production in late calendar year 2018. Weapons programs for which we have significant sales include the Joint Direct Attack Munition (“JDAM”), Small Diameter Bomb (“SDB”) and AIM-9X guided tactical weapon systems. We expect modest production rate increases, relative to recent years, for these weapons programs in fiscal year 2019 which we expect will lead to continued strong demand.

Aftermarket – Our commercial aftermarket business has increased, as our products have been selected for new aerospace platforms and our content has increased across existing platforms. With the entry into service of the new single aisle aircraft (Boeing 737 MAX and Airbus A320neo), we have seen a significant increase in initial provisioning sales to the operators of these new aircraft. As new aircraft production levels increase to accommodate passenger demand and mitigate higher operating costs driven largely by higher fuel costs, we expect airlines will retire older generation aircraft as they reach certain age thresholds (commonly around twenty-five years on average). However, in the past few years, aircraft retirements have decreased because passenger demand has outpaced deliveries of next generation aircraft, forcing older generation legacy aircraft to remain in service longer than anticipated. This has led to increased demand for repairs and spare parts for older engine programs remaining in service. In addition, we have experienced gains in commercial aftermarket related to repairs and spare parts for mature legacy programs with large in-service fleets, such as Airbus A320 and Boeing 777.

Global conflicts and growing international demand for various other military programs continue to drive demand for operations of defense aircraft, including fighter jets, transports and both utility and attack rotorcraft, supported by our products and systems. U.S. Government sustainment funds continue to be prioritized to defense aircraft platforms on which we have content. Defense aftermarket was down in fiscal year 2018, and we expect it to be variable in future periods, as it has been in the past. Variability is generally attributable to the cycling of various maintenance and upgrade programs, as well as actual usage.

Industrial Markets

Our industrial products are used worldwide in various types of turbine- and reciprocating engine-powered equipment, including wind turbines and electric power generation and distribution systems, ships, locomotives, compressors, pumps, and other mobile and industrial machines.

Industrial Turbines – The demand for industrial gas turbines for power generation, which consists mainly of heavy frames, aero derivatives and steam, was down in fiscal year 2018 compared to fiscal year 2017 as a result of excess inventory in the channel, increased efficiency leading to lower overall demand for electricity, and a decrease in volume resulting from the penetration of renewable power sources. Start reliability, fuel flexibility, and part-load efficiency are all key drivers of the turbine market as the conversion from coal to natural gas usage continues, and we believe Woodward is well positioned to meet these market needs on the existing and next generation turbines. Though the increasing global demand for energy supports long-term growth for industrial gas turbines, we now project that the industrial gas turbine business may not begin to recover until 2020 due to weak near-term demand for electricity resulting from the continuing penetration of renewable power sources and greater efficiency in energy demand.

Reciprocating Engines – Woodward's key markets for engine control technologies are power generation, transportation (including natural gas fueled trucks in Asia, mining, and marine shipping), and oil and gas. Although in 2018 there was weak market demand created by the uncertainty in both the supply and price stability of natural gas in China, sales of fuel systems for natural gas fueled trucks in China are expected to stabilize and recover in 2019 and grow over the long-term. An improving economy and the Chinese government's continued encouragement of natural gas usage under its initiative on air quality improvement is expected to create strong demand. In addition, we saw increased sales of large engines used in oil and gas and distributed power generation applications in 2018 related to increasing rig counts and capital investments. We anticipate these trends to continue into fiscal year 2019. We expect customer share gains and increased scope on the latest generation reciprocating engines, as well as continued demand for aftermarket products and services, to have a favorable impact on Woodward in fiscal year 2019. Government emissions requirements across many regions and new engine applications are driving demand for more sophisticated control systems, as is customer demand for improved engine efficiencies and increased reliability. Energy policies in some countries encourage the use of natural gas and other alternative fuels over carbon-rich petroleum fuels, which we expect will drive increased demand for our alternative fuel clean engine control technologies.

Renewable Power – The renewable power industry continued to grow in fiscal year 2018 and is expected to grow at a more moderate pace through the next decade. The shift from government subsidies to auction-based schemes, under which projects must bid a price per kilowatt hour to be awarded the project, has continued to drive down market pricing and intensify competition, although price erosion in Europe and India did stabilize through the course of fiscal year 2018. The arrival of Chinese OEMs in the European markets is expected to further contribute to price erosion. Pressure to reduce the levelized costs of energy ("LCOE") remains high and is expected to continue to drive down capital investment and operating costs for both onshore and offshore wind, with the LCOE in many cases expected to achieve parity with or be below fossil fuel energy sources. Consolidation within the renewables market is expected to continue due to increased competition and price erosion. The current technology trend for larger turbines (greater than 4 megawatts) and shorter platform lifecycles will continue to transform OEM product portfolios with demand for smaller designs (less than 2 megawatts) expected to continue their decline, particularly in the European markets. Woodward expects market growth in offshore turbines to continue to benefit from the economic pressures in the onshore turbine market. While the renewable power market remains robust, Woodward was unfavorably impacted in fiscal year 2018 as customers transitioned to wind turbines with less Woodward content. Looking forward, we expect we will regain market share as new wind turbine platforms launch with increased Woodward content. We anticipate the integration of renewable energy sources into the grid and increased global energy demand, along with the advancement of storage technologies, will drive new opportunities for our advanced control and protection solutions.

RESULTS OF OPERATIONS

Operational Highlights

Net sales for fiscal year 2018 were $2,325,873, an increase of $227,188, or 10.8%, from $2,098,685 for the prior fiscal year. Organic net sales for fiscal year 2018, which exclude $102,905 of net sales attributable to L'Orange, increased by $124,283 to $2,222,968, or 5.9%, compared to fiscal year 2017. Foreign currency exchange rates had a favorable impact on net sales of $19,625 for fiscal year 2018 as compared to the prior fiscal year. Aerospace segment sales for fiscal year 2018 were up 16.1% to $1,557,988, compared to $1,342,339 for the prior fiscal year. Industrial segment sales for fiscal year 2018 were $767,885, up 1.5% compared to $756,346 for fiscal year 2017. Foreign currency exchange rates had a favorable impact on Industrial segment net sales of $16,704 for fiscal year 2018 as compared to the prior fiscal year. Organic Industrial segment sales, which exclude $102,905 of net sales attributable to L'Orange, were down 12.1% to $664,980, compared to $756,346 for the prior fiscal year.

Net earnings for fiscal year 2018 were $180,378, or $2.82 per diluted share, compared to $200,507, or $3.16 per diluted share, for fiscal year 2017. Adjusted net earnings for fiscal year 2018 were $245,930, or adjusted earnings per share of $3.85 per diluted share.

The effective tax rate in fiscal year 2018 was 17.9%, compared to 20.7% for the prior fiscal year, primarily due the December 2017 changes in the U.S. federal tax law.

Earnings before interest and taxes (“EBIT”) for fiscal year 2018 were $249,674, down 10.3% from $278,452 in fiscal year 2017. Earnings before interest, taxes, depreciation and amortization (“EBITDA”) for fiscal year 2018 were $365,805, up 1.8% from $359,369 for fiscal year 2017. Adjusted EBIT and adjusted EBITDA for fiscal year 2018 were $325,666 and $423,736, respectively.

Aerospace segment earnings as a percent of segment net sales increased slightly to 19.4% in fiscal year 2018 from 19.2% in the prior fiscal year. Industrial segment earnings as a percent of segment net sales in fiscal year 2018 decreased to 6.2% from 10.4% in the prior fiscal year. Adjusted Industrial segment earnings as a percent of segment net sales were 10.7% for fiscal year 2018.

Adjusted net earnings, adjusted earnings per share, EBIT, adjusted EBIT, EBITDA and adjusted EBITDA and adjusted Industrial segment earnings are non-U.S. GAAP financial measures. A description of these measures as well as a reconciliation of these non-U.S. GAAP financial measures to the closest U.S. GAAP financial measure can be found under the caption "Non-U.S. GAAP Measures" in this Item 7 – Management's Discussion and Analysis of Financial Conditions and Results of Operations.

Liquidity Highlights

Net cash provided by operating activities for fiscal year 2018 was $299,292, compared to $307,537 for fiscal year 2017. Free cash flow, which we define as net cash flows provided by operating activities less payments for property, plant and equipment, was $172,152 for fiscal year 2018, compared to $215,201 for fiscal year 2017. Higher payments for plant, property and equipment in fiscal year 2018 were largely the result of renovations at our Drake Campus in Fort Collins, Colorado. In addition, we continue to invest in equipment for our second campus in the greater-Rockford, Illinois area. (A reconciliation of free cash flow, a non-U.S. GAAP financial measure, to the closest U.S. GAAP financial measure can be found under the caption "Non-U.S. GAAP Measures" in this Item 7 – Management's Discussion and Analysis of Financial Conditions and Results of Operations.)

On May 31, 2018, we entered into a note purchase agreement (the "2018 Note Purchase Agreement") relating to the sale by Woodward of an aggregate principal amount of $400,000 of senior unsecured notes to various third parties in a series of private placement transactions. We used the proceeds from the issuance of these notes, as well as borrowings from our revolving credit facility, to finance the acquisition of L'Orange.

At September 30, 2018, we held $83,594 in cash and cash equivalents, including restricted cash of $3,635, and had total outstanding debt of $1,246,032 with additional borrowing availability of $721,976, net of outstanding letters of credit, under our revolving credit agreement. At September 30, 2018, we had additional borrowing capacity of $7,440 under various foreign lines of credit and foreign overdraft facilities.

Consolidated Statements of Earnings and Other Selected Financial Data

The following table sets forth consolidated statements of earnings data as a percentage of net sales for each period indicated:

	Year Ended September 30,					
	2018		2017		2016	
		% of Net Sales		% of Net Sales		% of Net Sales
Net sales	$ 2,325,873	100 %	$ 2,098,685	100 %	$ 2,023,078	100 %
Costs and expenses:						
Cost of goods sold	1,719,675	73.9	1,526,126	72.7	1,483,960	73.4
Selling, general, and administrative expenses	192,757	8.3	176,633	8.4	174,017	8.6
Research and development costs	148,279	6.4	126,519	6.0	126,170	6.2
Restructuring charges	17,013	0.7	-	-	-	-
Interest expense	31,770	1.4	27,430	1.3	26,776	1.3
Interest income	(1,674)	(0.1)	(1,725)	(0.1)	(2,025)	(0.1)
Other expense (income), net	(1,525)	(0.1)	(9,045)	(0.4)	(12,306)	(0.6)

Total costs and expenses	2,106,295	90.6	1,845,938	88.0	1,796,592	88.8
Earnings before income taxes	219,578	9.4	252,747	12.0	226,486	11.2
Income tax expense	39,200	1.7	52,240	2.5	45,648	2.3
Net earnings	$ 180,378	7.8	$ 200,507	9.6	$ 180,838	8.9

Other select financial data:

	September 30, 2018	September 30, 2017
Working capital	$ 523,619	$ 593,955
Short-term borrowings	153,635	32,600
Total debt	1,246,032	612,886
Total stockholders' equity	1,538,104	1,371,383

2018 RESULTS OF OPERATIONS

2018 Net Sales Compared to 2017

Consolidated net sales for fiscal year 2018 increased by $227,188, or 10.8%, compared to fiscal year 2017. Organic consolidated net sales for fiscal year 2018, which excludes $102,905 of net sales attributable to L'Orange, increased by 5.9%, compared to fiscal year 2017. Details of the changes in consolidated net sales are as follows:

Consolidated net sales for the year ended September 30, 2017	$ 2,098,685
Aerospace volume	204,851
Industrial volume	(104,729)
Sales attributable to L'Orange	102,905
Effects of changes in price and sales mix	4,536
Effects of changes in foreign currency rates	19,625
Consolidated net sales for the year ended September 30, 2018	$ 2,325,873

The increase in net sales for fiscal year 2018 is primarily attributable to increased commercial and defense original equipment manufacturer ("OEM") and commercial aftermarket sales in the Aerospace segment, partially offset by ongoing weakness in organic net sales volumes across the majority of the Industrial segment. Net sales attributable to L'Orange more than offset the organic Industrial segment sales decline in fiscal year 2018.

Our worldwide sales activities are primarily denominated in USD, EUR, GBP, Japanese Yen ("JPY"), and Chinese Renminbi ("RMB"). As the USD, EUR, GBP, JPY and RMB fluctuate against each other and other currencies, we are exposed to gains or losses on sales transactions. For additional information on foreign currency exchange rate risk, please refer to the risk factor titled "We derive a significant portion of our revenues from sales to countries outside the United States and purchase raw materials and components from suppliers outside of the U.S.; therefore, we are subject to the risks inherent in doing business in other countries" set forth under the caption "Risk Factors" in Part I, Item 1A and Item 7A, "Quantitative and Qualitative Disclosures about Market Risks" of this Form 10-K.

2018 Costs and Expenses Compared to 2017

Cost of goods sold increased by $193,549 to $1,719,675, or 73.9% of net sales, for fiscal year 2018 from $1,526,126, or 72.7% of net sales, for fiscal year 2017. The increase in cost of goods sold in fiscal year 2018 as compared to fiscal year 2017 is primarily attributable to higher sales volume, additional costs of goods sold attributable to L'Orange sales, higher manufacturing costs related to increased capacity expansion costs to support increased production levels, and learning curve effects, partially offset by savings from cost reduction initiatives in our Industrial segment.

Gross margin (as measured by net sales less cost of goods sold, divided by net sales) was 26.1% for fiscal year 2018, compared to 27.3% for fiscal year 2017. The decrease in gross margin is primarily attributable to the cost of goods sold impact of an adjustment of $34,385 to record the acquired L'Orange inventories at their fair value as of the acquisition date and the amortization of the acquired L'Orange backlog intangible asset. Both the L'Orange inventory fair value adjustment and backlog intangible asset are recognized as a non-cash increase to cost of goods sold. Also contributing to the decrease are higher manufacturing costs related to increased capacity expansion costs to support increased production levels, and unfavorable product mix, which more than offset the favorable impact of increased sales volume driven by our Aerospace segment.

Selling, general and administrative expenses increased by $16,124, or 9.1%, to $192,757 for fiscal year 2018, as compared to $176,633 for fiscal year 2017. The increase in selling, general, and administrative expenses for fiscal year 2018 is partially attributable to L'Orange selling, general and administrative expenses. The remaining increase was primarily due to acquisition-related charges recorded in fiscal year 2018 associated with the acquisition of L'Orange, including acquisition transaction and integration costs of $5,208, warranty and indemnity insurance costs of $4,293, and German real estate transfer tax charges of $3,385. Excluding these acquisition-related charges, selling, general and administrative expenses as a percentage of net sales was 7.7% for fiscal year 2018, compared to 8.4% for fiscal year 2017.

Research and development costs increased by $21,760, or 17.2%, to $148,279 for fiscal year 2018, as compared to $126,519 for fiscal year 2017. Research and development costs as a percentage of net sales increased to 6.4% for fiscal year 2018 as compared to 6.0% for fiscal year 2017.

Research and development costs in fiscal year 2018 were higher due to increased spending on new awards and opportunities being pursued primarily in our Aerospace segment, as well as variability in the timing of projects and expenses. In addition, fiscal year 2018 included research and development costs attributable to L'Orange. Our research and development activities extend across almost all of our customer base, and we anticipate ongoing variability in research and development due to the timing of customer business needs on current and future programs.

Restructuring charges of $17,013 in fiscal year 2018 relate primarily to workforce management cost associated with the Company's decision in the second quarter of fiscal year 2018 to relocate its Duarte, California operations to the Company's newly renovated Drake Campus in Fort Collins, Colorado. Also included in the restructuring charges for fiscal year 2018 were workforce management costs related to the Company's ongoing effort to align its industrial turbomachinery business with current market conditions. All of the restructuring charges recorded in fiscal 2018 were recorded as nonsegment expenses. There were no comparable costs and expenses recorded in fiscal year 2017.

Interest expense increased to $31,770, or 1.4% of net sales for fiscal year 2018, compared to $27,430, or 1.3% of net sales, for fiscal year 2017. The increase in interest expense in fiscal year 2018 compared to fiscal year 2017 is due to the additional interest expense associated with the financing of the L'Orange Acquisition. Related to the acquisition, in the third quarter of fiscal year 2018 we issued an aggregate principal amount of $400,000 of senior unsecured notes in a series of private placement transactions and borrowed $167,420 under our revolving credit agreement to fund the acquisition.

Other income, net was $1,525 for fiscal year 2018, compared to other income, net of $9,045 for fiscal year 2017. On April 18, 2018, the Company entered into a forward option whereby, on May 30, 2018, the Company had the ability to exercise its option to purchase €490,000 on June 1, 2018 using U.S. dollars at a fixed exchange rate of 1.2432 (the "Forward Option"). The decrease in other income, net in fiscal year 2018 compared to fiscal year 2017 is primarily attributable to a one-time cost of $5,543 associated with the Forward Option. We entered into the Forward Option to manage our exposure to fluctuations in the Euro prior to the anticipated close of the L'Orange Acquisition. We did not enter into the Forward Option for trading or speculative purposes. Refer to Note 16, Other (income) expense, net in the Notes to the Consolidated Financial Statements in "Item 8 – Financial Statements and Supplementary Data" for further information on the items include in other income, net.

Income taxes were provided at an effective rate on earnings before income taxes of 17.9% for fiscal year 2018, compared to 20.7% for fiscal year 2017. The changes in components of our effective tax rate (as a percentage of earnings before income taxes) were attributable to the following:

Effective tax rate for the year ended September 30, 2017		20.7	%
Current year effect of U.S. federal corporate rate reduction		(10.5)	
Effect of U.S. federal corporate rate reduction on net current year U.S. deferred tax activity		2.0	
Impact of the Tax Act:			
Effect of U.S. federal corporate rate reduction on net beginning U.S. deferred tax liability	(5.0)		
Transition tax	6.2		
Increased deferred tax liability associated with anticipated repatriation taxes	3.7		
Net impact of enactment of the Tax Act		4.9	
Taxes on international activities		5.8	
Research and experimentation credit		(1.6)	
State and local taxes		(0.3)	
Adjustment of prior period tax items		(4.1)	
Other		1.0	
Effective tax rate for the year ended September 30, 2018		17.9	%

The decrease in the effective tax rate for fiscal year 2018 compared to fiscal year 2017 is primarily attributable to the current year impact of the U.S. federal corporate tax rate reduction in connection with the enactment of “An Act to Provide for Reconciliation Pursuant to Titles II and V of the Concurrent Resolution on the Budget for Fiscal Year 2018” (the “Tax Act”) (previously known as “The Tax Cuts and Jobs Act”), which was partially offset by a net unfavorable impact from the Tax Act of $10,860 in fiscal year 2018. Also contributing to the decrease in the effective tax rate was the fiscal year 2018 research and experimentation credit, which was higher than the fiscal year 2017 credit, as well as larger favorable resolutions of tax matters in fiscal year 2018 compared to fiscal year 2017. The overall decrease in the effective tax rate was partially offset by the fiscal year 2017 benefit from the repatriation to the U.S. of certain net foreign profits and losses, which did not repeat in fiscal year 2018.

As a result of the Tax Act, we have calculated a U.S. federal statutory corporate income tax rate of 24.5% for the fiscal year ending September 30, 2018 and we expect the U.S. federal statutory rate to be 21% for fiscal years beginning after September 30, 2018. Overall, we anticipate the decrease in the U.S. federal statutory rate resulting from the enactment of the Tax Act will have a favorable impact on our future U.S. tax expense and operating cash flows.

Within the calculation of our annual effective tax rate we have used assumptions and estimates that may change as a result of future guidance, interpretation, and rule-making from the Internal Revenue Service, the SEC, the Financial Accounting Standards Board ("FASB") and/or various other taxing jurisdictions. Changes in corporate tax rates, the net deferred tax assets and/or liabilities relating to our U.S. operations, the taxation of foreign earnings, and the deductibility of expenses contained in the Tax Act or other future tax reform legislation could have a material impact on our future U.S. tax expense.

The total amount of the gross liability for worldwide unrecognized tax benefits reported in other liabilities in the Consolidated Balance Sheets was $8,364 at September 30, 2018 and $20,132 at September 30, 2017. At September 30, 2018, the amount of the liability for unrecognized tax benefits that would impact Woodward's effective tax rate, if recognized, was $3,288. We accrue for potential interest and penalties related to unrecognized tax benefits in tax expense. Woodward had accrued interest and penalties of $279 as of September 30, 2018 and $1,123 as of September 30, 2017.

Woodward's tax returns are subject to audits by U.S. federal, state, and foreign tax authorities, and these audits are at various stages of completion at any given time. Reviews of tax matters by authorities and lapses of the applicable statutes of limitation may result in changes to tax expense. Woodward's fiscal years remaining open to examination for U.S. Federal income taxes include fiscal years 2017 and thereafter. In fiscal year 2018, Woodward concluded its U.S. federal income tax examinations through fiscal year 2016. Woodward's fiscal years remaining open to examination for significant U.S. state income tax jurisdictions include fiscal years 2014 and thereafter. Fiscal years remaining open to examination in significant foreign jurisdictions include 2008 and thereafter.

Segment Results

The following table presents sales by segment:

	Year Ended September 30,								
	2018			2017			2016		
Net sales:									
Aerospace	$ 1,557,988	67.0	%	$ 1,342,339	64.0	%	$ 1,233,176	61.0	%
Industrial	767,885	33.0		756,346	36.0		789,902	39.0	

Consolidated net sales	$ 2,325,873	100.0 %	$ 2,098,685	100.0 %	$ 2,023,078	100.0 %

The following table presents earnings by segment and reconciles segment earnings to consolidated net earnings:

	Year Ended September 30,		
	2018	2017	2016
Aerospace	$ 301,803	$ 257,813	$ 232,166
Industrial	47,938	78,991	82,237
Nonsegment expenses	(100,067)	(58,352)	(63,166)
Interest expense, net	(30,096)	(25,705)	(24,751)
Consolidated earnings before income taxes	219,578	252,747	226,486
Income tax expense	39,200	52,240	45,648
Consolidated net earnings	$ 180,378	$ 200,507	$ 180,838

The following table presents segment earnings as a percent of segment net sales:

	Year Ended September 30,		
	2018	2017	2016
Aerospace	19.4 %	19.2 %	18.8 %
Industrial	6.2	10.4	10.4

2018 Segment Results Compared to 2017

Aerospace

Aerospace segment net sales were $1,557,988 for fiscal year 2018, up 16.1% compared to $1,342,339 for fiscal year 2017. The increase in segment net sales for fiscal year 2018 as compared to fiscal year 2017 was driven primarily by increased commercial and defense OEM and commercial aftermarket sales. Defense aftermarket sales were down in fiscal year 2018 as compared to fiscal year 2017.

Commercial OEM sales were up in fiscal year 2018 as compared to fiscal year 2017, driven by ongoing ramp-up in production of next generation aircraft on which we have increased content, as well as business jets and rotorcraft, which finished the fiscal year particularly strong.

Commercial aftermarket sales increased significantly in fiscal year 2018 as compared to fiscal year 2017, benefitting from both the initial provisioning for new platforms and increased utilization of existing fleets.

U.S. government funds continue to be prioritized for defense platforms on which we have content. Defense OEM sales increased in fiscal year 2018 compared to fiscal year 2017, driven primarily by continued strong demand for smart weapons, as well as growing international demand for various other military programs. Sales of fixed wing and rotorcraft platforms continued to improve compared to the prior year, particularly in the second half of fiscal year 2018. Defense aftermarket sales continued to decrease in fiscal year 2018 as compared to the fiscal year 2017, reflecting variability in the timing of continued maintenance needs and upgrade programs.

Aerospace segment earnings increased by $43,990, or 17.1%, to $301,803 for fiscal year 2018, compared to $257,813 for fiscal year 2017. The net increase in Aerospace segment earnings for fiscal year 2018 was due to the following:

Earnings for the year ended September 30, 2017	$ 257,813
Sales volume	102,498
Price, sales mix and productivity	(20,509)
Production capacity expansion costs	(14,868)
Increases in research and development expenses	(11,978)
Other, net	(11,153)
Earnings for the year ended September 30, 2018	$ 301,803

Aerospace segment earnings as a percentage of segment net sales were 19.4% for fiscal year 2018, compared to 19.2% for fiscal year 2017. Aerospace segment earnings in fiscal year 2018 benefitted from higher sales volume, which was partially offset by unfavorable product sales mix, higher manufacturing costs related to increased capacity expansion costs to support increased production levels, and learning curve effects. Aerospace segment earnings were also negatively impacted by increased investment in research and development for new program awards and opportunities being pursued.

Industrial

Industrial segment net sales increased by 1.5% to $767,885 for fiscal year 2018, compared to $756,346 for fiscal year 2017. Foreign currency exchange rates had a favorable impact on segment net sales of $16,704 for fiscal year 2018. Organic Industrial segment net sales, which excludes $102,905 of net sales attributable to L'Orange, were $664,980 for fiscal year 2018, a decrease of 12.1% compared to fiscal year 2017.

The overall decrease in organic Industrial segment net sales in fiscal year 2018 was primarily due to declines in industrial gas turbines and renewables sales. The decline in industrial gas turbine sales was the result of increased efficiency leading to lower overall demand for electricity and a decrease in volume resulting from the penetration of renewable power sources. We project that the industrial gas turbine business may not begin to recover until 2020. The sales decline in our renewables business was due to the short-term unfavorable impact of platform transitions by some of our customers. However, new platform offerings that started in the second half of fiscal year 2018 contributed to improved sequential and year-over-year renewables sales growth in the fourth quarter of fiscal year 2018, which we expect will continue into fiscal year 2019.

Sales of fuel systems for compressed natural gas ("CNG") trucks in Asia decreased in fiscal year 2018 compared to fiscal year 2017 due to weak market demand created by the uncertainty of natural gas supply and price stability. However, we expect this market to recover in fiscal year 2019, as the Chinese government continues to encourage natural gas usage under its initiative on air quality improvement.

Industrial segment earnings decreased by $31,053, or 39.3%, to $47,938 for fiscal year 2018, compared to $78,991 for fiscal year 2017. Adjusted Industrial segment earnings, which exclude certain purchase accounting impacts related to the L'Orange Acquisition, were $82,323, an increase of 4.2% compared to fiscal year 2017. The net decrease in Industrial segment earnings for fiscal year 2018 was due to the following:

Earnings for the year ended September 30, 2017	$ 78,991
Sales volume	(50,124)
Price, sales mix and productivity	6,462
Savings from cost reduction initiatives	5,625
Impact of L'Orange acquisition	(9,395)
Effects of changes in foreign currency rates	2,271
Other, net	14,108
Earnings for the year ended September 30, 2018	$ 47,938

Industrial segment earnings as a percentage of segment net sales were 6.2% for fiscal year 2018, compared to 10.4% for fiscal year 2017. Adjusted Industrial segment earnings as a percentage of segment net sales were 10.7% for fiscal year 2018. The decrease in segment earnings as a percentage of sales for fiscal year 2018 was primarily due to sales volume decreases.

Nonsegment expenses

Nonsegment expenses increased to $100,067 for fiscal year 2018, compared to $58,352 for fiscal year 2017. The increase in nonsegment expenses in fiscal year 2018 as compared to fiscal year 2017 is due to certain charges related to the acquisition of L'Orange ("L'Orange Acquisition Related Charges") recognized in the second half of fiscal year 2018, as well as restructuring charges of $17,013 and Duarte move related costs of $6,165 recognized in fiscal year 2018. The L'Orange Acquisition Related Charges recognized in the third quarter of fiscal year 2018 included (i) merger and acquisition transaction and integration costs, (ii) cost associated with the Forward Option, (iii) warranty and indemnity insurance costs, and (iv) German real estate transfer tax costs. Excluding these nonsegment expenses recorded in fiscal year 2018, nonsegment expenses as a percent of consolidated net sales decreased to 2.5% of consolidated net sales for fiscal year 2018, compared to 2.8% of consolidated net sales for fiscal year 2017.

2017 RESULTS OF OPERATIONS

2017 Sales Compared to 2016

Consolidated net sales for fiscal year 2017 increased 3.7% to $2,098,685 from $2,023,078 in fiscal year 2016. Details of the changes in consolidated net sales are as follows:

Consolidated net sales for the year ended September 30, 2016	$ 2,023,078
Aerospace volume	98,340
Industrial volume	(25,399)
Effects of changes in price and sales mix	7,680
Effects of changes in foreign currency rates	(5,014)

Consolidated net sales for the year ended September 30, 2017	$ 2,098,685

The increase in net sales for fiscal year 2017 was primarily attributable to increased defense OEM sales and increased commercial aftermarket and OEM sales in the Aerospace segment and increased sales of fuel systems for CNG trucks in Asia in our Industrial segment, partially offset by decreased industrial gas turbine aftermarket and OEM sales and wind turbine converter sales in our Industrial segment.

2017 Costs and Expenses Compared to 2016

Costs and expenses for fiscal year 2016 included special charges totaling approximately $16,100 ($13,300 included in cost of goods sold, $1,700 included in selling, general and administrative expenses, and $1,100 included in research and development costs) related to our efforts to consolidate facilities, reduce costs and address current market conditions in fiscal year 2016. There were no comparable costs and expenses recorded in fiscal year 2017.

Cost of goods sold increased by $42,166 to $1,526,126, or 72.7% of net sales, for fiscal year 2017 from $1,483,960, or 73.4% of net sales, for fiscal year 2016. The increase in cost of goods sold for fiscal year 2017 as compared to fiscal year 2016 is primarily attributable to higher sales volume and planned facility ramp-up costs in our Aerospace segment in fiscal year 2017. Fiscal year 2017 also included increased new facility expenses for our new Colorado facilities as compared to the prior fiscal year. The increase year-over-year was partially offset by the inclusion of special charges in fiscal year 2016 of approximately $13,300, as described above, for which no such similar charge was recorded in fiscal year 2017.

Gross margin (as measured by net sales less cost of goods sold, divided by net sales) was 27.3% for fiscal year 2017, compared to 26.6% for fiscal year 2016. The increase in gross margin for fiscal year 2017 as compared to fiscal year 2016 was due to the inclusion in cost of goods sold of approximately $13,300 of special charges in fiscal year 2016 and fixed cost leverage on higher sales volume in our Aerospace segment in fiscal year 2017, partially offset by unfavorable mix and increases in facility ramp-up costs in fiscal year 2017 in both our Aerospace and Industrial segments.

Selling, general, and administrative expenses increased by $2,616, or 1.5%, to $176,633 for fiscal year 2017, as compared to $174,017 for fiscal year 2016. Selling, general, and administrative expenses as a percentage of net sales was 8.4% for fiscal year 2017, as compared to 8.6% for fiscal year 2016. The increase in selling, general and administrative expenses for fiscal year 2017 was primarily due to normal variability in costs, partially offset by savings associated with cost reduction initiatives previously implemented. In addition, fiscal year 2016 included special charges of approximately $1,700, described above, recorded in the first quarter of fiscal year 2016.

Research and development costs increased by $349, or 0.3%, to $126,519 for fiscal year 2017, as compared to $126,170 for fiscal year 2016. Research and development costs decreased as a percentage of net sales to 6.0% for fiscal year 2017, as compared to 6.2% for fiscal year 2016. Research and development costs in fiscal year 2017 were slightly higher due primarily to normal variability. The first quarter of fiscal year 2016 included special charges of approximately $1,100 described above.

Interest expense increased to $27,430, or 1.3% of net sales for fiscal year 2017, compared to $26,776, or 1.3% of net sales, for fiscal year 2016. The slight increase in interest expense is primarily attributable to lower amounts of capitalized interest as compared to fiscal year 2016, as capital projects were completed in fiscal year 2017, partially offset by a decrease in higher interest debt due to the retirement of $57,000 of 7.81% Series E notes in fiscal year 2016.

Income taxes were provided at an effective rate on earnings before income taxes of 20.7% for fiscal year 2017, compared to 20.2% for fiscal year 2016. The changes in components of our effective tax rate (as a percentage of earnings before income taxes) were attributable to the following:

Effective tax rate for the year ended September 30, 2016	20.2	%
Research and experimentation credit	3.6	
State and local taxes	(0.7)	
Adjustment of prior period tax items	(0.7)	
Taxes on international activities	(5.4)	
Net excess income tax benefit from stock-based compensation	1.2	
Domestic production activity deduction	0.6	
Other	1.9	
Effective tax rate for the year ended September 30, 2017	20.7	%

The increase in the year-over-year effective tax rate for fiscal year 2017 compared to fiscal year 2016 was primarily attributable to the retroactive benefit of the U.S. research and experimentation credit pursuant to the December 18, 2015 enactment of the Protecting Americans from Tax Hikes Act of 2015, which was included in the effective tax rate for the first quarter of fiscal year 2016, but did not repeat in fiscal year 2017, and a smaller favorable rate adjustment for the net excess income tax benefit from stock-based compensation in fiscal year 2017 compared to fiscal year 2016. This increase was partially offset by the impact of the repatriation to the United States of certain net foreign profits and losses in the first quarter of fiscal year 2017. The U.S. foreign tax credits available as a result of the repatriation of the foreign net earnings were greater than the U.S. taxes payable on these net foreign earnings. The excess U.S. foreign tax credits are expected to be used to offset U.S. taxes on other foreign source income. In addition this increase was also partially offset by larger favorable resolutions of tax matters in fiscal year 2017 compared to fiscal year 2016.

2017 Segment Results Compared to 2016

Aerospace

Aerospace segment net sales were $1,342,339 for fiscal year 2017, up 8.9% compared to $1,233,176 for fiscal year 2016. The increase in segment net sales for fiscal year 2017 as compared to fiscal year 2016 was driven primarily by increased defense OEM sales and increased commercial aftermarket and OEM sales in fiscal year 2017. Defense aftermarket sales were slightly down in fiscal year 2017 as compared to fiscal year 2016.

Defense OEM sales increased in fiscal year 2017 compared to fiscal year 2016, driven by sales of smart weapons, as demand was strong. Defense aftermarket sales decreased slightly in fiscal year 2017 as compared to fiscal year 2016, reflecting variability in the timing of continued maintenance needs and upgrade programs.

Commercial aftermarket sales increased significantly in fiscal year 2017 as compared to fiscal year 2016, benefitting from both the initial provisioning for new platforms and increased utilization of existing fleets.

Commercial OEM sales were up for fiscal year 2017 as compared to fiscal year 2016 due to next generation aircraft programs driving strong commercial OEM sales, reflecting the increased production of certain next generation aircraft on which Woodward has increased content, partially offset by continued weakness in business jets and rotorcraft.

Aerospace segment earnings increased by $25,647, or 11.0%, to $257,813 for fiscal year 2017, compared to $232,166 for fiscal year 2016. The increase in Aerospace segment earnings for fiscal year 2017 were due to the following:

Earnings for the year ended September 30, 2016	$ 232,166
Sales volume	50,555
Price, sales mix and productivity	(6,032)
New facility costs	(11,462)
Joint venture earnings	(3,635)
Other, net	(3,779)
Earnings for the year ended September 30, 2017	$ 257,813

Aerospace segment earnings as a percentage of segment net sales were 19.2% for fiscal year 2017, compared to 18.8% for fiscal year 2016. The increase in Aerospace segment earnings was primarily attributable to higher sales volume, partially offset by new facility costs, unfavorable mix and lower earnings from Woodward's strategic joint venture with GE (the "JV").

Industrial

Industrial segment net sales decreased by 4.2% to $756,346 for fiscal year 2017, compared to $789,902 for fiscal year 2016. Industrial gas turbine aftermarket and OEM sales and renewables sales declined in fiscal year 2017 as compared to fiscal year 2016. The decline in industrial gas turbine sales was the result of excess inventory in the channel, increased efficiency, and the impact of renewables. The decline in renewables sales was due to unfavorable regional dynamics in the wind turbine market, as well as short-term platform transitions by some of our customers. Sales of fuel systems for CNG trucks in Asia increased in fiscal year 2017 as compared to fiscal year 2016 as the Chinese government was and continues to encourage natural gas usage. In addition, reciprocating engine power generation applications were up in fiscal year 2017 as compared to fiscal year 2016.

Industrial segment earnings decreased by $3,246, or 3.9%, to $78,991 for fiscal year 2017, compared to $82,237 for fiscal year 2016. The decrease in Industrial segment earnings for fiscal year 2017 was due to the following:

Earnings for the year ended September 30, 2016	$ 82,237
Sales volume	(14,042)
Price, sales mix and productivity	(3,506)
Savings from cost reduction initiatives	17,233
New facility costs	(4,692)

Effects of changes in foreign currency rates	(870)
Other, net	2,631
Earnings for the year ended September 30, 2017	$ 78,991

Industrial segment earnings as a percentage of sales were 10.4% for both fiscal years 2017 and 2016. The decrease in segment earnings for fiscal year 2017 as compared to the same period of fiscal year 2016 was driven primarily by the impact of lower sales volume, unfavorable sales mix, and the increase in new facility costs, which were partially offset by the savings associated with cost reduction initiatives that had been previously implemented.

Nonsegment expenses

Nonsegment expenses decreased to $58,352 for fiscal year 2017, compared to $63,166 for fiscal year 2016. As a percent of net sales, nonsegment expenses were 2.8% of net sales for fiscal year 2017, compared to 3.1% of net sales for fiscal year 2016. The decrease in nonsegment expenses in fiscal year 2017 as compared to fiscal year 2016 was due to special charges taken in the first quarter of fiscal year 2016 as described above, which did not recur in fiscal year 2017, partially offset by normal variability in costs.

LIQUIDITY AND CAPITAL RESOURCES

Historically, we have satisfied our working capital needs, as well as capital expenditures, product development and other liquidity requirements associated with our operations, with cash flow provided by operating activities and borrowings under our credit facilities. Historically, we have also issued debt to supplement our cash needs, repay our other indebtedness or finance our acquisitions. We expect that cash generated from our operating activities, together with borrowings under our revolving credit facility and other borrowing capacity, will be sufficient to fund our continuing operating needs, including capital expansion funding for the foreseeable future.

Our aggregate cash and cash equivalents were $83,594 at September 30, 2018 and $87,552 at September 30, 2017, and our working capital was $523,619 at September 30, 2018 and $593,955 at September 30, 2017. Of the cash and cash equivalents held at September 30, 2018, $3,635 is restricted in its use and $77,065 was held by our foreign locations. We are not presently aware of any significant restrictions on the repatriation of these funds, although a portion is considered indefinitely reinvested in these foreign subsidiaries. If these funds were needed to fund our operations or satisfy obligations in the United States, then they could be repatriated and their repatriation into the United States may cause us to incur additional U.S. income taxes or foreign withholding taxes. Any additional U.S. taxes could be offset, in part or in whole, by foreign tax credits. The amount of such taxes and application of tax credits would be dependent on the income tax laws and other circumstances at the time these amounts are repatriated. Based on these variables, it is impractical to determine the income tax liability that might be incurred if these funds were to be repatriated. The additional uncertainty associated with the Tax Act increases the impracticality of determining this income tax liability.

We do not believe the one-time repatriation tax on deferred foreign income resulting from the Tax Act, which is expected to be paid over an eight year period beginning in January 2019, will have a significant impact on our cash flows in any individual fiscal year.

Consistent with common business practice in China, our Chinese subsidiaries accept bankers' acceptance notes from Chinese customers, in settlement of certain customer accounts receivable. Bankers' acceptance notes are financial instruments issued by Chinese financial institutions as part of financing arrangements between the financial institution and a customer of the financial institution. Bankers' acceptance notes represent a commitment by the issuing financial institution to pay a certain amount of money at a specified future maturity date to the legal owner of the bankers' acceptance note as of the maturity date. The maturity date of bankers' acceptance notes varies, but it is our policy to only accept bankers' acceptance notes with maturity dates no more than 180 days from the date of our receipt of such draft. The issuing financial institution is the obligor, not our customers. Upon our acceptance of a bankers' acceptance note from a customer, such customer has no further obligation to pay us for the related accounts receivable balance. We had bankers' acceptance notes of $23,191 at September 30, 2018 and $38,243 at September 30, 2017 recorded as non-customer accounts receivable in our Consolidated Balance Sheets. We only accept bankers' acceptance notes issued by banks that are believed to be creditworthy and to which the credit risks associated with the bankers' acceptance notes are believed to be low.

Our revolving credit facility matures in April 2020 and provides a borrowing capacity of up to $1,000,000 with the option to increase total available borrowings to up to $1,200,000, subject to lenders' participation. We can borrow against our revolving credit facility as long as we are in compliance with all of our debt covenants. Borrowings under the revolving credit facility can be made in U.S dollars or in foreign currencies other than the U.S. dollar provided that the U.S dollar equivalent of any foreign currency borrowings and U.S. dollar borrowings does not, in total, exceed the borrowing capacity of the revolving credit facility. Historically, we have used borrowings under our revolving credit facilities to meet certain short-term working capital needs, as well as for strategic uses, including repurchases of our common stock, payments of dividends, acquisitions, and facilities expansions. On May 31, 2018, we borrowed $167,420 under our revolving credit facility to finance a portion the L'Orange Acquisition. On October 1, 2018, we borrowed $100,000 under our revolving credit facility to pay an aggregate principal amount of $100,000 in debt related to our Series D Notes, which matured and became payable on that date.

In addition to our revolving credit facility, we have various foreign credit facilities, some of which are tied to net amounts on deposit at certain foreign financial institutions. These foreign credit facilities are reviewed annually for renewal. We use borrowings under these foreign credit facilities to finance certain local operations on a periodic basis. For further discussion of our revolving credit facility and our other credit facilities, see Note 13, Credit facilities, short-term borrowings and long-term debt in the Notes to the Consolidated Financial Statements in "Item 8 – Financial Statements and Supplemental Data."

On May 31, 2018, we entered into a note purchase agreement (the "2018 Note Purchase Agreement") relating to the sale by Woodward of an aggregate principal amount of $400,000 of senior unsecured notes comprised of (a) $85,000 aggregate principal amount of its Series P Senior Notes due May 30, 2025 and bearing interest at a rate of 4.27% per annum, (b) $85,000 aggregate principal amount of its Series Q Senior Notes due May 30, 2027 and bearing interest at a rate of 4.35% per annum, (c) $75,000 aggregate principal amount of its Series R Senior Notes due May 30, 2029 and bearing interest at a rate of 4.41% per annum, (d) $75,000 aggregate principal amount of its Series S Senior Notes due May 30, 2030 and bearing interest at a rate of 4.46% per annum, and (e) $80,000 aggregate principal amount of its Series T Senior Notes due May 30, 2033 and bearing interest at a rate of 4.61% per annum (collectively, the "2018 Notes").

Our obligations under the 2018 Note Purchase Agreement and the 2018 Notes will rank at all times at least pari passu, without preference or priority, with our existing senior unsecured notes and our outstanding debt under our revolving credit facility. Similar to our existing senior unsecured debt, at our option, we are permitted at any time to prepay all or any part of the then-outstanding principal amount of any series of the 2018 Notes at 100% of the principal amount of the series of 2018 Notes to be prepaid (but, in the case of partial prepayment, not less than $1,000), together with interest accrued on such amount to be prepaid to the date of prepayment, plus any applicable prepayment compensation amount.

At September 30, 2018, we had total outstanding debt of $1,246,032 consisting primarily of amounts borrowed under our revolving credit facility and various series of unsecured notes due between 2018 and 2033, with additional borrowing availability of $721,976 under our revolving credit facility, net of outstanding letters of credit, and additional borrowing availability of $7,440 under various foreign credit facilities. As of September 30, 2018, an aggregate principal amount of $100,000 in debt related to our Series D Notes, which matured and was paid on October 1, 2018 using proceeds from borrowings under our revolving credit facility, and an aggregate principal amount of $43,000 in debt related to our Series F Notes, which mature and are payable in April 2019, were classified as long-term based on our intent and ability to refinance this debt using cash proceeds from our existing revolving credit facility which, in turn, is expected to be repaid beyond the next twelve months. For further discussion of our notes, see Note 13, Credit facilities, short-term borrowings and long-term debt in the Notes to the Consolidated Financial Statements in "Item 8 – Financial Statements and Supplemental Data."

At September 30, 2018, we had $266,541 of borrowings outstanding under our revolving credit facility, $150,000 of which was classified as short-term borrowings based on our intent and ability to pay this amount in the next twelve months. Of these borrowings, as of September 30, 2018, $241,000 is denominated in U.S. dollars and €25,541 is denominated in Euro. Revolving credit facility and short-term borrowing activity during the fiscal year ended September 30, 2018 were as follows:

Maximum daily balance during the period	$ 439,654
Average daily balance during the period	$ 238,608
Weighted average interest rate on average daily balance	2.79%

We believe we were in compliance with all our debt covenants as of September 30, 2018. See Note 13, Credit facilities, short-term borrowings and long-term debt in the Notes to the Consolidated Financial Statements in "Item 8 – Financial Statements and Supplemental Data," for more information about our covenants.

In addition to utilizing our cash resources to fund the working capital needs of our business, we evaluate additional strategic uses of our funds, including the repurchase of our common stock, payment of dividends, significant capital expenditures, consideration of strategic acquisitions and other potential uses of cash.

In fiscal year 2018, we entered into the L'Orange Agreement. Pursuant to the L'Orange Agreement, we agreed to acquire all of the outstanding shares of stock of L'Orange. We completed the acquisition of L'Orange on June 1, 2018, for total consideration (including cash consideration and the assumption of certain liabilities) of €700,000, or approximately $811,000. The cash consideration was financed through the use of cash on hand, the issuance of the 2018 Notes and $167,420 borrowed under our existing revolving credit facility. In connection with these borrowings, the Company entered into cross currency swap transactions, which effectively lowered the interest rate on each tranche of the 2018 Notes and the borrowings under the existing revolving credit agreement (see Note 7, Derivative instruments and hedging activities in the Notes to Consolidated Financial Statements in "Item 8 – Financial Statements and Supplemental Data," for more information).

On April 18, 2018, we entered into the Forward Option at a cost of $5,543 to manage our exposure to fluctuations in the Euro prior to the anticipated close of the L'Orange Acquisition. We did not enter into the Forward Option for trading or speculative purposes. On May 30, 2018, we had the ability to exercise the option to purchase €490,000 on June 1, 2018 using U.S. dollars at a fixed exchange rate of 1.2432. As the spot rate was below 1.2432 on May 30, 2018, we elected not to exercise the option and a loss of $5,543 was recognized on the Forward Option in "other (income) expense, net" in the Consolidated Statements of Earnings in the fiscal year ended September 30, 2018.

Our ability to service our long-term debt, to remain in compliance with the various restrictions and covenants contained in our debt agreements, and to fund working capital, capital expenditures and product development efforts will depend on our ability to generate cash from operating activities, which in turn is subject to, among other things, future operating performance as well as general economic, financial, competitive, legislative, regulatory, and other conditions, some of which may be beyond our control.

On January 4, 2016, we consummated the formation of the JV. GE purchased from Woodward a 50% ownership interest in the JV for a $250,000 cash payment to Woodward. In addition, GE will pay contingent consideration to Woodward consisting of fifteen annual payments of $4,894 per year beginning January 4, 2017 subject to certain claw-back conditions. The $250,000 cash consideration received from GE on January 4, 2016 was taxable in the United States upon receipt. The taxes of approximately $95,000 associated with this cash consideration were paid through estimated payments made during fiscal year 2016. To date, GE has made contingent consideration payments to Woodward in an amount totaling $9,788.

In the first quarter of fiscal year 2016, we executed a 10b5-1 plan to repurchase up to $125,000 of our common stock for a period that ended on April 20, 2016. During the fiscal year ended September 30, 2016, we purchased 2,635 shares of our common stock for $125,000 under the 10b5-1 plan, using a portion of the $250,000 received from GE.

In the first quarter of fiscal year 2017, our board of directors terminated the Company's prior stock repurchase program and replaced it with a new program for the repurchase of up to $500,000 of Woodward's outstanding shares of common stock on the open market or in privately negotiated transactions over a three-year period that will end in November 2019 (the "2017 Authorization"). In fiscal year 2017, we purchased 1,027 shares of our common stock for $71,197 under the 2017

Authorization, of which 491 shares were purchased pursuant to a 10b5-1 plan and 536 were purchased pursuant to a 10b-18 plan. We repurchased no stock in fiscal year 2018.

For our Aerospace segment, we have been purchasing production equipment for our second campus in the greater-Rockford, Illinois area and anticipate continuing such purchases as new aircraft platforms ramp up to full production volumes. The second campus was built to support the expected growth in our Aerospace segment as a result of our being awarded a substantial number of new system platforms, particularly on narrow-body aircraft.

Associated with the relocation of our Duarte operations to our Drake campus, we have identified assets held for sale with a carrying value of $8,306 at September 30, 2018, which relate to the land, building and building improvements, and other assets at the Duarte facility. Based on current market conditions, we expect to record a gain on the eventual sale of these assets. The carrying value of the remaining assets at the Duarte facility was approximately $2,600 as of September 30, 2018.

We believe that cash flows from operations, along with our contractually committed borrowings and other borrowing capability, will continue to be sufficient to fund anticipated capital spending requirements and our operations for the foreseeable future. However, we could be adversely affected if the financial institutions providing our capital requirements refuse to honor their contractual commitments, cease lending, or declare bankruptcy. We believe the lending institutions participating in our credit arrangements are financially stable.

Cash Flows

	Year Ended September 30,		
	2018	2017	2016
Net cash provided by operating activities	$ 299,292	$ 307,537	$ 435,379
Net cash used in investing activities	(896,567)	(91,866)	(173,946)
Net cash provided by (used in) financing activities	605,998	(211,813)	(260,993)
Effect of exchange rate changes on cash and cash equivalents	(12,681)	2,604	(1,552)
Net change in cash and cash equivalents	(3,958)	6,462	(1,112)
Cash and cash equivalents at beginning of year	87,552	81,090	82,202
Cash and cash equivalents, including restricted cash, at end of period	$ 83,594	$ 87,552	$ 81,090

2018 Cash Flows Compared to 2017

Net cash flows provided by operating activities for fiscal year 2018 was $299,292, compared to $307,537 for fiscal year 2017. The decrease in cash flows from operating activities in fiscal year 2018 compared to the prior fiscal year is primarily attributable to higher cash use in fiscal year 2018 due to the timing of payments of various accounts payable and higher income tax payments, partially offset by higher cash receipts from increased sales volume.

Net cash flows used in investing activities for fiscal year 2018 was $896,567, compared to $91,866 for fiscal year 2017. The increase in cash used in investing activities compared to the prior fiscal year is primarily due to the acquisition of L'Orange on June 1, 2018 which used $771,115 in cash, as well as increased payments for capital expenditures. Payments for property, plant and equipment increased by $34,804 from $92,336 in fiscal year 2017 to $127,140 in fiscal year 2018 primarily due to renovations at our Drake Campus in Fort Collins, Colorado and equipment purchases for our second campus in the greater-Rockford, Illinois area.

Net cash flows provided by financing activities for fiscal year 2018 was $605,998, compared to net cash use of $211,813 in fiscal year 2017. The net cash flows provided by financing activities in fiscal year 2018 is primarily the result of the issuance of an aggregate principal amount of $400,000 of long-term debt in May 2018 and borrowings of $167,420 under our existing revolving credit facility, both of which were used primarily to finance the acquisition of L'Orange. Also during fiscal year 2018, we had net debt borrowings unrelated to the acquisition of L'Orange in the amount of $70,486, partially offset by cash dividends paid of $34,003 and payments of $5,543 for the settlement of the Forward Option. In fiscal year 2017, we paid cash dividends of $29,745, made net debt payments of $124,512, and we utilized $71,197 to repurchase 1,027 shares of our common stock under the 2017 Authorization. We made no stock repurchases in fiscal year 2018.

2017 Cash Flows Compared to 2016

Net cash flows provided by operating activities for fiscal year 2017 was $307,537, compared to $435,379 in fiscal year 2016. The decrease in cash provided by operating activities in fiscal year 2017 compared to fiscal year 2016 was primarily attributable to the JV Proceeds of $155,000 received in fiscal year 2016. This decrease was partially offset by an earnings increase of $19,669 in fiscal year 2017 compared to fiscal year 2016 and changes in working capital providing a net source of cash of $651 in fiscal year 2017 as compared to a net use of cash of $9,387 in fiscal year 2016. Working capital changes reflected an increase in cash provided of $47,198 due mainly to accounts payable increasing in the fiscal year 2017 compared to fiscal year 2016 related primarily to the timing of payments for various accounts payable for fiscal year 2017 that occurred after the fiscal year end, which was mostly offset by an increase in usage of cash of $43,961 due to accounts receivable increasing more in fiscal year 2017 compared to the increase in the fiscal year 2016.

Net cash flows used in investing activities for fiscal year 2017 was $91,866, compared to $173,946 in fiscal year 2016. The decrease in cash used in investing activities in fiscal year 2017 compared to fiscal year 2016 was due primarily to decreased payments for capital expenditures. Payments for property, plant and equipment decreased by $83,356 to $92,336 in fiscal year 2017, as compared to $175,692 in fiscal year 2016, related mainly to lower equipment purchases in fiscal year 2017 associated with the completion of our Industrial segment facility in Fort Collins, Colorado.

Net cash flows used in financing activities for fiscal year 2017 was $211,813, compared to $260,993 in fiscal year 2016. During fiscal year 2017, we had net debt payments of $124,512, compared to net debt payments of $123,875 in fiscal year 2016. We utilized $71,197 to repurchase 1,027 shares of our common stock in fiscal year 2017 under the 2017 Authorization, compared to $125,000 to repurchase 2,635 shares of our common stock in fiscal year 2016 under the then existing stock repurchase program.

Off-Balance Sheet Arrangements

As of September 30, 2018, we did not have any off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K promulgated by the SEC, that have or are reasonably likely to have a current or future effect on our financial condition, changes in our financial condition, revenues, or expenses, results of operations, liquidity, capital expenditures, or capital resources, that are material to investors.

Contractual Obligations

A summary of our consolidated contractual obligations and commitments as of September 30, 2018 is as follows:

	Year Ending September 30,					
	2019	2020	2021	2022	2023	Thereafter
	(in thousands)					
Long-term debt principal	$ 143,000	$ -	$ 100,000	$ -	$ -	$ 735,751
Interest on debt obligations (1)	29,703	22,803	21,136	18,624	18,304	82,633
Operating leases	7,579	4,808	4,228	3,227	2,542	3,636
Capital leases	566	212	118	-	-	-
Purchase obligations (2)	429,409	25,636	1	-	-	-
Other (3)	-	-	-	-	-	8,364
Total	$ 610,257	$ 53,459	$ 125,483	$ 21,851	$ 20,846	$ 830,384

(1) Interest obligations on floating rate debt instruments are calculated for future periods using interest rates in effect as of September 30, 2018. See Note 13, Credit facilities, short-term borrowings and long-term debt, in the Notes to the Consolidated Financial Statements in “Item 8 – Financial Statements and Supplementary Data” for further details on our long-term debt.

(2) Purchase obligations include amounts committed under legally enforceable contracts or purchase orders for goods and services with defined terms as to price, quantity, delivery, and termination liability.

(3) The $8,364 included in other obligations in the “Thereafter” column represents our best reasonable estimate for uncertain tax positions at this time and may change in future periods, as the timing of the payments and whether such payments will actually be required cannot be reasonably estimated.

The above table does not reflect the following items:

- As of September 30, 2018, there were $266,541 of outstanding borrowings on our revolving credit facility, $150,000 of which were classified as short-term based on our intent and ability to pay this amount in the next twelve months. Our revolving credit facility matures in April 2020.
- Contributions to our retirement pension benefit plans, which we estimate will total approximately $1,819 in fiscal year 2019. As of September 30, 2018 our pension plans were net underfunded by $25,795 based on projected benefit obligations. Statutory pension contributions in future fiscal years will vary as a result of a number of factors, including actual plan asset returns and interest rates.
- Contributions to our other postretirement benefit plans, which we estimate will total $3,615 in fiscal year 2019. Other postretirement contributions are made on a “pay-as-you-go” basis as payments are made to healthcare providers, and such contributions will vary as a result of changes in the future cost of postretirement healthcare benefits provided for covered retirees. As of September 30, 2018, our other postretirement benefit plans were underfunded by $27,985 based on projected benefit obligations.

- Business commitments made to certain customers to perform under long-term product development projects, some of which may result in near-term financial losses. Such losses, if any, are recognized when they become likely to occur.

In connection with the sale of the Fuel & Pneumatics product line during fiscal year 2009, Woodward assigned to a subsidiary of the purchaser its rights and responsibilities related to certain contracts with the U.S. Government. Woodward provided to the U.S. Government a customary guarantee of the purchaser's subsidiary's obligations under the contracts. The purchaser and its affiliates have agreed to indemnify Woodward for any liability incurred with respect to the guarantee.

Guarantees and letters of credit totaling approximately $13,020 were outstanding as of September 30, 2018, some of which were secured by parent guarantees from Woodward, or by Woodward's line of credit facilities.

In the event of a change in control of Woodward, as defined in change-in-control agreements with our current corporate officers, we may be required to pay termination benefits to such officers.

New Accounting Standards

From time to time, the Financial Accounting Standards Board ("FASB") or other standards-setting bodies issue new accounting pronouncements. Updates to the FASB Accounting Standards Codification are communicated through issuance of an Accounting Standards Update ("ASU"). Unless otherwise discussed, we believe that the impact of recently issued guidance, whether adopted or to be adopted in the future, is not expected to have a material impact on our Consolidated Financial Statements upon adoption.

To understand the impact of recently issued guidance, whether adopted or to be adopted, please review the information provided in Note 2, New accounting standards, in the Notes to the Consolidated Financial Statements in "Item 8 – Financial Statements and Supplementary Data."

Non-U.S. GAAP Financial Measures

Organic net sales, organic Industrial net sales, adjusted net earnings, adjusted earnings per share, adjusted Industrial segment earnings, EBIT, adjusted EBIT, EBITDA, adjusted EBITDA, and free cash flow are financial measures not prepared and presented in accordance with U.S. GAAP. However, we believe these non-U.S. GAAP financial measures provide additional information that enables readers to evaluate our business from the perspective of management.

Organic net sales and organic Industrial net sales

The Company presents certain sales measures excluding L'Orange net sales, which it refers to as "organic", to show the changes to Woodward's historical business. Management believes this improves comparability to the Company's performance prior to the L'Orange Acquisition, which occurred in June 2018.

Earnings based non-U.S. GAAP financial measures

Adjusted net earnings is defined by the Company as net earnings excluding, (i) restructuring charges, (ii) Duarte move related costs, (iii) the purchase accounting impacts related to the revaluation of the L'Orange inventory recognized in cost of goods sold and the amortization of the backlog intangible, (iv) the L'Orange Acquisition transaction and integration costs, (v) cost associated with the Forward Option, (vi) warranty and indemnity insurance costs associated with the acquisition of L'Orange, (vii) German real estate transfer tax costs associated with the acquisition of L'Orange, and (viii) the transition impacts of the change in U.S. federal tax legislation in December 2017. The Company believes that these excluded items are short-term in nature, not directly related to the ongoing operations of the business and therefore, the exclusion of them illustrates more clearly how the underlying business of Woodward is performing. Management uses adjusted net earnings in evaluating the Company's performance excluding these infrequent or unusual period expenses that are not necessarily indicative of the Company's operating performance for the period. Management defines adjusted earnings per share as adjusted net earnings, as defined above, divided by the weighted-average number of diluted shares of common stock outstanding for the period. Management uses both adjusted net earnings and adjusted earnings per share when comparing operating performance to other periods which may not have similar infrequent or unusual charges.

The reconciliation of net earnings and earnings per share to adjusted net earnings and adjusted earnings per share, respectively, for the fiscal year ended September 30, 2018 is shown in the table below. Adjusted net earnings and adjusted earnings per share for the fiscal years ended September 30, 2017 and September 30, 2016 are not shown, as there were no comparable adjustments to U.S. GAAP net earnings or earnings per share in those fiscal years.

	2018	
	Net Earnings	Earnings Per Share
Net earnings (U.S. GAAP)	$ 180,378	$ 2.82
Non-U.S. GAAP adjustments:		
Restructuring charges, net of tax	12,674	0.20
Duarte move related costs, net of tax	4,414	0.07
Purchase accounting impacts, net of tax1	24,591	0.38
L'Orange Acquisition transaction and integration costs, net of tax	3,758	0.06
Costs associated with the Forward Option, net of tax	3,880	0.06
Warranty and indemnity insurance costs associated with the acquisition of L'Orange, net of tax	3,005	0.05
German real estate transfer costs associated with the acquisition of L'Orange, net of tax	2,370	0.04
Non-U.S. GAAP adjustments	54,692	0.86
Impact of recent changes to U.S. tax law	10,860	0.17
Total Non-U.S. GAAP adjustments	65,552	1.03
Adjusted net earnings (Non-U.S. GAAP)	$ 245,930	$ 3.85

(1) The purchase accounting impacts relate to the revaluation of the L’Orange inventory recognized in cost of goods sold and the amortization of the backlog intangible, net of tax.

Adjusted Industrial segment earnings is defined by the Company as Industrial segment earnings excluding the purchase accounting impacts related to the revaluation of the L’Orange inventory recognized in cost of goods sold and the amortization of the backlog intangible. The Company believes that these purchase accounting impacts are short-term in nature, not related to the ongoing operations of the Industrial segment business and therefore, the exclusion of them illustrates more clearly how the underlying business of Woodward’s Industrial segment is performing.

The reconciliation of Industrial segment earnings to adjusted Industrial segment earnings for the fiscal year ended September 30, 2018 is shown in the table below. Adjusted Industrial segment earnings for the fiscal years ended September 30, 2017 and September 30, 2016 are not shown, as there were no comparable adjustments to U.S. GAAP Industrial segment earnings in those periods.

	Year Ended September 30, 2018
Industrial segment earnings (U.S. GAAP)	$ 47,938
Purchase accounting impacts1	34,385
Adjusted Industrial segment earnings (Non-U.S. GAAP)	$ 82,323

(1) The purchase accounting impacts relate to the revaluation of the L’Orange inventory recognized in cost of goods sold and the amortization of the backlog intangible.

Management uses EBIT to evaluate Woodward's performance without financing and tax related considerations, as these elements may not fluctuate with operating results. Management uses EBITDA in evaluating Woodward's operating performance, making business decisions, including developing budgets, managing expenditures, forecasting future periods, and evaluating capital structure impacts of various strategic scenarios. Securities analysts, investors and others frequently use EBIT and EBITDA in their evaluation of companies, particularly those with significant property, plant, and equipment, and intangible assets subject to amortization. The Company believes that EBIT and EBITDA are useful measures to the investor when measuring operating performance as they eliminate the impact of financing and tax laws and regulations and, in the case of EBITDA, the non-cash charges associated with depreciation and amortization. Further, as interest from financing, income taxes, depreciation and amortization can vary dramatically between companies and between periods, management believes that the removal of these items can improve comparability.

Adjusted EBIT and adjusted EBITDA represent further non-U.S. GAAP adjustments to EBIT and EBITDA, in each case adjusted to exclude (i) restructuring charges, (ii) Duarte move related costs, (iii) the purchase accounting impacts related to the revaluation of the L'Orange inventory recognized in cost of goods sold and the amortization of the backlog intangible, (iv) the L'Orange acquisition transaction and integration costs, (v) cost associated with the Forward Option, (vi) warranty and indemnity insurance costs associated with the acquisition of L'Orange, and (vii) German real estate transfer tax costs associated with the acquisition of L'Orange. As these charges are infrequent or unusual charges that can be variable from period to period and may not fluctuate with operating results, management believes that by removing these charges from EBIT and EBITDA it improves comparability of past, present and future operating results and provides consistency when comparing EBIT and EBITDA between periods.

EBIT and adjusted EBIT for the fiscal years ended September 30, 2018, September 30, 2017, and September 30, 2016 were as follows:

	Year Ended September 30,		
	2018	2017	2016
Net earnings (U.S. GAAP)	$ 180,378	$ 200,507	$ 180,838
Income tax expense	39,200	52,240	45,648
Interest expense	31,770	27,430	26,776
Interest income	(1,674)	(1,725)	(2,025)
EBIT (Non-U.S. GAAP)	249,674	278,452	251,237
Non-U.S. GAAP adjustments:			
Restructuring charges	17,013	-	-
Duarte move related costs	6,165	-	-
Purchase accounting impacts1	34,385	-	-
L'Orange Acquisition transaction and integration costs	5,208	-	-
Costs associated with the Forward Option	5,543	-	-
Warranty and indemnity insurance costs associated with the acquisition of L'Orange	4,293	-	-
German real estate transfer costs associated with the acquisition of L'Orange	3,385	-	-
Total non-U.S. GAAP adjustments	75,992	-	-
Adjusted EBIT (Non-U.S. GAAP)	$ 325,666	$ 278,452	$ 251,237

(1) The purchase accounting impacts relate to the revaluation of the L'Orange inventory recognized in cost of goods sold and the amortization of the backlog intangible.

EBITDA and adjusted EBITDA for fiscal years ended September 30, 2018, September 30, 2017, and September 30, 2016 were as follows:

	Year Ended September 30,		
	2018	2017	2016
Net earnings (U.S. GAAP)	$ 180,378	$ 200,507	$ 180,838
Income tax expense	39,200	52,240	45,648
Interest expense	31,770	27,430	26,776
Interest income	(1,674)	(1,725)	(2,025)
Amortization of intangible assets	44,742	25,777	27,486
Depreciation expense	71,389	55,140	41,550
EBITDA (Non-U.S. GAAP)	365,805	359,369	320,273
Non-U.S. GAAP adjustments:			
Restructuring charges	17,013	-	-
Duarte move related costs	6,165	-	-
Purchase accounting impacts1	16,324	-	-
L'Orange Acquisition transaction and integration costs	5,208	-	-
Costs associated with the Forward Option	5,543	-	-
Warranty and indemnity insurance costs associated with the acquisition of L'Orange	4,293	-	-
German real estate transfer costs associated with the acquisition of L'Orange	3,385	-	-
Total non-U.S. GAAP adjustments	57,931	-	-
Adjusted EBITDA (Non-U.S. GAAP)	$ 423,736	$ 359,369	$ 320,273

(1) The purchase accounting impacts relate to the revaluation of the L'Orange inventory recognized in cost of goods sold.

The use of these non-U.S. GAAP financial measures is not intended to be considered in isolation of, or as a substitute for, the financial information prepared and presented in accordance with U.S. GAAP. As adjusted net earnings, adjusted net earnings per share, adjusted Industrial segment earnings, EBIT, adjusted EBIT, EBITDA, and adjusted EBITDA exclude certain financial information compared with net earnings, the most comparable U.S. GAAP financial measure, users of this financial information should consider the information that is excluded. Our calculations of adjusted net earnings, adjusted net earnings per share, adjusted Industrial segment earnings, EBIT, adjusted EBIT, EBITDA, and adjusted EBITDA may differ from similarly titled measures used by other companies, limiting their usefulness as comparative measures.

Cash flow-based non-U.S. GAAP financial measures

Management uses free cash flow, which is defined by the Company as net cash flows provided by operating activities less payments for property, plant and equipment, in reviewing the financial performance of and cash generation by Woodward's various business groups and evaluating cash levels. We believe free cash flow is a useful measure for investors because it portrays our ability to grow organically and generate cash from our businesses for purposes such as paying interest on our indebtedness, repaying maturing debt, funding business acquisitions, investing in research and development, purchasing our common stock, and paying dividends. In addition, securities analysts, investors, and others frequently use free cash flow in their evaluation of companies. The use of this non-U.S. GAAP financial measure is not intended to be considered in isolation of, or as substitutes for, the financial information prepared and presented in accordance with U.S. GAAP. Free cash flow does not necessarily represent funds available for discretionary use, and is not necessarily a measure of our ability to fund our cash needs. Our calculation of free cash flow may differ from similarly titled measures used by other companies, limiting its usefulness as a comparative measure.

Free cash flow for the fiscal years ended September 30, 2018, September 30, 2017, and September 30, 2016 were as follows:

	Year Ended September 30,		
	2018	2017	2016
Net cash provided by operating activities (U.S. GAAP)	$ 299,292	$ 307,537	$ 435,379
Payments for property, plant and equipment	(127,140)	(92,336)	(175,692)
Free cash flow (Non-U.S. GAAP)	$ 172,152	$ 215,201	$ 259,687

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CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of financial statements and related disclosures in conformity with U.S. GAAP requires us to make judgments, assumptions, and estimates that affect the amounts reported in the Consolidated Financial Statements and accompanying notes. Note 1, Operations and summary of significant accounting policies, to the Consolidated Financial Statements describes the significant accounting policies and methods used in the preparation of the Consolidated Financial Statements. The estimates and assumptions described below are those that we consider to be most critical to an understanding of our financial statements because they involve significant judgments and uncertainties. All of these estimates reflect our best judgment about current, and for some estimates, future economic and market conditions and their effects based on information available as of the date of these financial statements. As estimates are updated or actual amounts are known, our critical accounting estimates are revised, and operating results may be affected by the revised estimates. Actual results may differ from these estimates under different assumptions or conditions.

Our management has discussed the development and selection of these critical accounting estimates with the Audit Committee of our Board of Directors, and the Audit Committee has reviewed our disclosures in this Management's Discussion and Analysis.

Revenue recognition

Woodward recognizes revenue when the following criteria are met:

1) persuasive evidence of an arrangement exists,

2) delivery of the product has occurred or services have been rendered,

3) price is fixed or determinable, and

4) collectability is reasonably assured.

In implementing the four criteria stated above, we have found that determining when the risks and rewards of ownership have passed to the customer, which determines whether persuasive evidence of an arrangement exists and if delivery has occurred, may require judgment. The passage of title indicates transfer of the risks and rewards of ownership from Woodward to the customer; however, contract- and customer-specific circumstances are reviewed by management to ensure that transfer of title constitutes the transfer of the risks and rewards of ownership.

Examples of situations requiring management review and judgment, with respect to the passage of the risks and rewards of ownership, include: interpretation of customer-specific contract terms, situations where substantive performance obligations exist, such as completion of product testing that remain after product delivery to the customer, situations that require customer acceptance (or in some instances regulatory acceptance) of the product, and situations in countries whose laws provide for retention of some form of title by sellers such that Woodward is able to recover goods in the event a customer defaults on payment.

Based on management’s determination, if the risks and rewards of ownership have not passed to the customer, revenue is deferred until this requirement is met.

For discussion of the impacts of the adoption of ASC Topic 606 on revenue recognition, see Note 2, New accounting standards, to the Notes to the Consolidated Financial Statements included in “Item 8 – Financial Statements and Supplementary Data.”

Purchase Accounting

On June 1, 2018, Woodward completed the acquisition of L'Orange. Woodward has not completed its allocation of the purchase price to the assets acquired and liabilities assumed. The preliminary allocation of the purchase price to the assets acquired and liabilities assumed was accounted for under the purchase method of accounting in accordance with ASC Topic 805, “Business Combinations.” Assets acquired and liabilities assumed in the transaction were recorded at their estimated acquisition date fair values, while transaction costs associated with the acquisition were expensed as incurred. Woodward’s preliminary allocation as of September 30, 2018 was based on an evaluation of the appropriate fair values and represents management’s best estimate based on available data. For more information on the L’Orange Acquisition see Note 4, Business acquisition, in the Notes to the Consolidated Financial Statements included in “Item 8 – Financial Statements and Supplementary Data.”

Assigning fair values to the assets acquired and liabilities assumed at the date of an acquisition requires knowledge of current market values, and the values of assets in use, and often requires the application of judgment regarding estimates and assumptions. While the ultimate responsibility resides with management, we retained the services of certified valuation specialists to assist with assigning estimated values to certain acquired assets and assumed liabilities, including intangible assets and other postretirement benefit plan assets and liabilities.

Acquired intangible assets, excluding goodwill, are valued using a discounted cash flow methodology based on future cash flows specific to the type of intangible asset purchased. This methodology incorporates various estimates and assumptions, the most significant being projected revenue growth rates, earnings margins, future tax rates, and forecasted cash flows based on the discount rate and terminal growth rate. Management projects revenue growth rates, earnings margins and cash flows based on the historical operating results of the acquired entity adjusted for synergies anticipated to be achieved through integration, expected future performance, operational strategies, and the general macroeconomic environment. We review finite-lived intangible assets for triggering events such as significant changes in operations, customers or future revenue that might indicate the need to impair the assets acquired or change the useful lives of the assets acquired. We review indefinite-lived intangibles for impairment on an annual basis or more frequently if an event occurs or circumstances change that would more likely than not reduce the fair value of the indefinite-lived intangible asset below its carrying value.

Estimated values for acquired property, plant and equipment are based on current market values and replacement costs of similar assets. Estimated values for inventory acquired is subject to reliable estimates, as of the acquisition date, of future sales volumes, replacement costs, costs of selling effort, anticipated selling prices, normal profit margins, and the percent complete and the costs to complete work-in-process inventory. Estimated values for accounts receivable are subject to reliable estimates of collectability.

Assumed liabilities are valued based on estimates of anticipated expenditures to be incurred to satisfy the assumed obligations, including estimation of any warranty or other contractual liabilities assumed, which require the exercise of professional judgment. Valuation of postretirement benefit plan assets and liabilities is dependent on similar assumptions and estimates as those used to value our non-acquisition postretirement benefit plan assets and liabilities.

Assumed contracts may have favorable or unfavorable terms that must be valued as of the acquisition date. Such valuation is subject to management judgment regarding the evaluation and interpretation of contract terms in relation to other economic circumstances, such as the market rates for office space leases.

Assumed acquired tax liabilities for uncertain tax positions are dependent on assessing the past practices of the acquisition target based on review of actual tax filings and information obtained through due diligence procedures. Evaluation of the validity of tax positions taken by the acquisition target are subject to management judgment.

Inventory

Inventories are valued at the lower of cost or net realizable value. Inventory cost is determined using methods that approximate the first-in, first-out basis. We include product costs, labor and related fixed and variable overhead in the cost of inventories.

Inventory net realizable values are determined by giving substantial consideration to the expected product selling price. We estimate expected selling prices based on our historical recovery rates, general economic and market conditions, the expected channel of disposition, and current customer contracts and preferences. Actual results may differ from our estimates due to changes in resale or market value and the mix of these factors. Management monitors inventory for events or circumstances, such as negative margins, recent sales history suggesting lower sales value, or changes in customer preferences, which would indicate the net realizable value of inventory is less than the carrying value of inventory, and management records adjustments as necessary. When inventory is written down below cost, such reduced amount is considered the cost for subsequent accounting purposes. Our recording of inventory at the lower of cost or net realizable value has not historically required material adjustments once initially established.

The carrying value of inventory was $549,596 at September 30, 2018 and $473,505 at September 30, 2017. If economic conditions, customer product requirements, or other factors significantly reduce future customer demand for our products from forecast levels, then future adjustments to the carrying value of inventory may become necessary. We attempt to maintain inventory quantities at levels considered necessary to fill expected orders in a reasonable time frame, which we believe mitigates our exposure to future inventory carrying cost adjustments.

Depreciation and amortization

The carrying value of property, plant and equipment was $1,060,005 at September 30, 2018 and $922,043 at September 30, 2017. Depreciation expense was $71,389 in fiscal year 2018, $55,140 in fiscal year 2017, and $41,550 in fiscal year 2016. Depreciation of property, plant and equipment is generally computed using the straight-line method, which requires estimates of asset useful lives and ultimate salvage value.

The carrying value of intangible assets was $700,883 at September 30, 2018 and $171,882 at September 30, 2017. Amortization expense was $44,742 in fiscal year 2018, $25,777 in fiscal year 2017, and $27,486 in fiscal year 2016. Amortization of intangible assets is generally computed using patterns that reflect the periods over which the economic benefits of the assets are expected to be realized. Impairment losses are recognized if the carrying amount of an intangible is both not estimated to be recoverable and exceeds it fair value.

Reviews for impairment of goodwill

At September 30, 2018, we had $813,250 of goodwill, representing 21% of our total assets. Goodwill is tested for impairment at the reporting unit level on an annual basis and more often if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. Based on the relevant U.S. GAAP authoritative guidance, we aggregate components of a single operating segment into a reporting unit, if appropriate. For purposes of performing the impairment tests, we identify reporting units in accordance with U.S. GAAP. The identification of reporting units and consideration of the aggregation of components into a single reporting unit requires management judgment. The impairment tests consist of comparing the fair value of reporting units, determined using discounted cash flows, with their carrying amount including goodwill. If the carrying amount of the reporting unit exceeds its fair value, we compare the implied fair value of goodwill with its carrying amount. If the carrying amount of goodwill exceeds the implied fair value of goodwill, an impairment loss would be recognized to reduce the carrying amount to its implied fair value. Woodward has not recorded any impairment charges.

During the fourth quarter, Woodward completed its annual goodwill impairment test as of July 31, 2018 for the fiscal year ended September 30, 2018. At that date, Woodward determined it was appropriate to aggregate certain components of the same operating segment into a single reporting unit. The fair value of each of Woodward's reporting units was determined using an income approach based on a discounted cash flow method. This method represents a Level 3 input (based upon a fair value hierarchy established by U.S. GAAP) and incorporates various estimates and assumptions, the most significant being projected revenue growth rates, earnings margins, future tax rates and the present value, based on an estimated weighted-average cost of capital (or the discount rate) and terminal growth rate, of forecasted cash flows. Management projects revenue growth rates, earnings margins and cash flows based on each reporting unit's current operational results, expected performance and operational strategies over a ten-year period. These projections are adjusted to reflect current economic conditions and demand for certain products, and require considerable management judgment.

Forecasted cash flows used in the July 31, 2018 impairment test were discounted using weighted-average cost of capital assumptions ranging from 9.83% to 12.76%. The terminal values of the forecasted cash flows were calculated using the Gordon Growth Model and assumed an annual compound growth rate after ten years of 3.32%. These inputs, which are unobservable in the market, represent management's best estimate of what market participants would use in determining the present value of the Company's forecasted cash flows. Changes in these estimates and assumptions can have a significant impact on the fair value of forecasted cash flows. Woodward evaluated the reasonableness of the reporting units resulting fair values utilizing a market multiple method.

The results of Woodward's annual goodwill impairment test performed as of July 31, 2018, indicated the estimated fair value of each reporting unit was significantly in excess of its carrying value, and accordingly, no impairment existed. Increasing the discount rate by 20%, decreasing the growth rate by 20%, or decreasing forecasted cash flow by 20%, would also not have resulted in an impairment charge at July 31, 2018.

As part of the Company's ongoing monitoring efforts to assess goodwill for possible indications of impairment, we will continue to consider a wide variety of factors, including but not limited to the global economic environment and its potential impact on Woodward's business. There can be no assurance that our estimates and assumptions regarding forecasted cash flows of certain reporting units, the current economic environment, or the other inputs used in forecasting the present value of forecasted cash flows will prove to be accurate projections of future performance.

The preliminary purchase price allocation associated with the acquisition of L'Orange resulted in the recognition of $257,447 of goodwill in the fiscal year ended September 30, 2018. As Woodward has not yet completed its preliminary purchase price allocation, the goodwill associated with the acquisition of L'Orange was excluded from the

July 31, 2018 goodwill impairment test.

Postretirement benefits

The Company provides various benefits to certain employees through defined benefit pension plans and other postretirement benefit plans. A September 30 measurement date is used to value plan assets and obligations for all Woodward defined benefit pension and other postretirement benefit plans. For financial reporting purposes, net periodic benefits expense and related obligations are calculated using a number of significant actuarial assumptions, including anticipated discount rates, rates of compensation increases, long-term return on defined benefit plan investments, and anticipated healthcare cost increases. Based on these actuarial assumptions, at September 30, 2018, our recorded assets and liabilities included a net liability of $25,795 for our defined benefit pension plans and a net liability of $27,985 for our other postretirement benefit plans. Changes in net periodic expense or the amounts of recorded assets and liabilities may occur in the future due to changes in these assumptions.

Estimates of the value of postretirement benefit obligations, and related net periodic benefits expense, are dependent on actuarial assumptions, including future interest rates, compensation rates, mortality trends, healthcare cost trends, termination and retirement rates, and returns on defined benefit plan investments.

It should be noted that economic factors and conditions often affect multiple assumptions simultaneously, and the effects of changes in assumptions are not necessarily linear due to factors such as the 10% corridor applied to the larger of the postretirement benefit obligation or the fair market value of plan assets used to determine the amortization of actuarial net gains or losses.

Mortality assumptions are based on published mortality studies developed primarily based on past experience of the broad population and modified for projected longevity trends. The projected benefit obligations in the United States as of September 30, 2018 and September 30, 2017 was based on the Society of Actuaries ("SOA") RP-2014 Mortality Tables Report projected back to 2006 using the SOA's Mortality Improvement Scale MP-2014 ("MP-2014") and projected forward using a custom projection scale based on MP-2014 with a 10-year convergence period and a long-term rate of 0.75%. As of September 30, 2018 and September 30, 2017, mortality assumptions in Japan were based on the Standard rates 2014, mortality assumptions for the United Kingdom were based on the Self-administered pension scheme ("SAPS") S2 "all" tables with a projected 1.5% annual improvement rate, and mortality assumptions in Germany were based on the Heubeck 2005 G mortality tables.

Primary actuarial assumptions for our defined benefit pension plans were determined as follows:

· The discount rate assumption is intended to reflect the rate at which the retirement benefits could be effectively settled based upon the assumed timing of the benefit payments.

In the United States, Woodward uses a bond portfolio matching analysis based on recently traded, non-callable bonds rated AA or better that have at least $50 million outstanding to determine the benefit obligations at year end.

In the United Kingdom, Germany and Japan, Woodward uses a high-quality corporate bond yield curve matched with separate cash flows to develop a single rate to determine the single rate equivalent to settle the entire benefit obligations in each jurisdiction. For the fiscal years ended September 30, 2018 and 2017, the discount rate used to determine periodic service cost and interest cost components of the overall benefit costs was based on spot rates derived from the same high-quality corporate bond yield curve used to determine the September 30, 2017 and 2016 benefit obligation, respectively, matched with separate cash flows for each future year.

These rates are sensitive to changes in interest rates.

	Change In Discount Rate	
	1% increase	1% decrease
Defined benefit pension benefits:		
2019 Net Periodic Benefit Cost	$ (422)	$ 519
2019 Projected Service and Interest Costs	453	(683)
Accumulated Post Retirement Benefit Obligation as of Sept. 30, 2018	(32,672)	41,331

- Compensation increase assumptions, where applicable, are based upon historical experience and anticipated future management actions. An increase in the rate would increase our obligation and expense.
- Mortality trends assumptions are based on published actuarial data and are sometimes modified to reflect projected longevity trends. Increases in life expectancy of participants greater than assumed would increase our obligation and expense.
- In determining the long-term rate of return on plan assets, we consider the asset investment mix for each plan. For example, fixed-income securities generally have a lower rate of return than equity securities. We assume that the historical long-term compound growth rates of similar equity and fixed-income securities will predict the future returns of investments in the various plan portfolios. We consider the potential impacts of changes in general market conditions, but because our assumptions are based on long-term rates of return, short-term market conditions generally have an insignificant effect on our assumptions. Changes in asset allocations are managed on a plan-by-plan basis, taking into consideration factors such as the average age of the plan participants and the projected timing of future benefit payments.

	Change In Rate of Return on Plan Assets	
	0.5% increase	0.5% decrease
Defined benefit pension benefits:		
2019 Net Periodic Benefit Cost	$ 1,119	$ (1,119)

If, as of the beginning of the year, the net plan gain or loss recognized in accumulated other comprehensive income exceeds 10% of the greater of the plan projected benefit obligation or the market-related value of plan assets, the amortization out of accumulated other comprehensive income into current period expense is that excess divided by the average remaining service period of employees expected to receive benefits under the plan.

Primary actuarial assumptions for our other postretirement benefit plans were determined as follows:

- The discount rate assumption is intended to reflect the rate at which the postretirement benefits could be effectively settled based upon the assumed timing of the benefit payments.

In the United States, Woodward uses a bond portfolio matching analysis based on recently traded, non-callable bonds rated AA or better that have at least $50 million outstanding to determine the benefit obligations at year end. Outside the United States, Woodward uses a high-quality corporate bond yield curve matched with separate cash flows to develop a single rate to determine the single rate equivalent to settle the entire benefit obligation.

These rates are sensitive to changes in interest rates.

	Change In Discount Rate	
	1% increase	1% decrease
Other postretirement benefits:		
2019 Net Periodic Benefit Cost	$ 141	$ (162)
2019 Projected Service and Interest Costs	155	(187)
Accumulated Post Retirement Benefit Obligation as of Sept. 30, 2018	(2,132)	2,458

- Mortality trends assumptions are based on published actuarial data and are sometimes modified to reflect projected longevity trends. Increases in life expectancy of participants greater than assumed would increase our obligation and expense.
- The assumed health care trend rate represents the rate at which health care costs are assumed to increase and is based on historical and expected experience. Changes in our projections of future health care costs due to general economic conditions and those specific to health care (e.g., technology driven cost changes) will impact this trend rate.

	Change In Health Care Cost Trend Rate	
	1% increase	1% decrease
Effect on projected fiscal year 2019 service and interest cost	$ 106	$ (93)
Effect on accumulated postretirement benefit obligation at September 30, 2018	2,450	(2,165)

If, as of the beginning of the year, the net plan gain or loss recognized in accumulated other comprehensive income exceeds 10% of the plan accumulated postretirement benefit obligation, the amortization out of accumulated other comprehensive income into current period expense is that excess divided by the average remaining service period of employees expected to receive benefits under the plan.

Variances from our fiscal year end estimates for these variables could materially affect our recognized postretirement benefit obligation liabilities. On a near-term basis, such changes are unlikely to have a material impact on reported earnings, since such adjustments are recorded to other comprehensive earnings and recognized into expense over a number of years. Significant changes in estimates could, however, materially affect the carrying amounts of benefit obligation liabilities, including accumulated benefit obligations, which could affect compliance with the provisions of our debt arrangements and future borrowing capacity.

Income taxes

We are subject to income taxes in the United States and numerous foreign jurisdictions. Significant judgment is required in evaluating our tax positions and determining our provision for income taxes.

During the ordinary course of business, there are many transactions and calculations for which the ultimate tax determination is uncertain. We establish reserves for tax-related uncertainties based on estimates of whether, and the extent to which, additional taxes will be due. The reserves are established when we believe that certain positions are likely to be challenged and may not be fully sustained on review by tax authorities. We adjust these reserves in light of changing facts and circumstances, such as the closing of a tax audit or refinement of an estimate. Although we believe our reserves are reasonable, no assurance can be given that the final outcome of these matters will be consistent with what is reflected in our historical income tax provisions and accruals. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will impact the current provision for income taxes. The provision for income taxes includes the impact of reserve positions and changes to reserves that are considered appropriate. As of September 30, 2018 and September 30, 2017, unrecognized gross tax benefits for which recognition has been deferred were $8,364 and $20,132, respectively.

Significant judgment is also required in determining any valuation allowance recorded against deferred tax assets. The determination of the amount of valuation allowance to be provided on recorded deferred tax assets involves estimates regarding the timing and amount of the reversal of taxable temporary differences, expected future taxable income, and the impact of tax planning strategies. A valuation allowance is established to offset any deferred tax assets if, based upon the available evidence, it is more likely than not that some or all of the deferred tax asset will not be realized. In assessing the need for a valuation allowance, we consider all available evidence including past operating results, estimates of future taxable income, and the feasibility of tax planning strategies. Changes in the relevant facts can significantly impact the judgment or need for valuation allowances. In the event we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made. Our valuation allowance was $4,522 as of September 30, 2018 and $3,714 as of September 30, 2017.

Our effective tax rates differ from the U.S. statutory rate primarily due to the tax impact of foreign operations, adjustments of valuation allowances, research tax credits, state taxes, and tax audit settlements. In addition to potential local country tax law and policy changes that could impact the provision for income taxes, management's judgment about and intentions concerning the repatriation of foreign earnings could also significantly impact the provision for income taxes. Management reassesses its judgment regularly, taking into consideration the potential tax impacts of these judgments and intentions.

On December 22, 2017, the United States enacted significant changes to the U.S. tax law following the passage and signing of the Tax Act. The Tax Act included significant changes to existing tax law, including a permanent reduction to the U.S. federal corporate income tax rate from 35% to 21%, a one-time repatriation tax on deferred foreign income ("Transition Tax"), deductions, credits and business-related exclusions. Enactment of the Tax Act during fiscal year 2018 resulted in a net charge to Woodward's income tax expense in the amount of $10,860. The Company will finalize its assessment of the income tax effects of the Tax Act in the first fiscal quarter of fiscal year 2019.

Our provision for income taxes is subject to volatility and could be affected by earnings that are different than those anticipated in countries which have lower or higher tax rates; by transfer pricing adjustments; and/or changes in tax laws, regulations, and accounting principles, including accounting for uncertain tax positions, or interpretations thereof. There can be no assurance that these items will remain stable over time. Additionally, with the adoption of ASU 2016-09, "Improvements to Employee Share-Based Payments Accounting," in fiscal year 2016, Woodward is recording through income tax expense all future excess tax benefits and tax deficiencies from stock options exercised. This new guidance creates unpredictable volatility in the effective tax rate because the additional expense or benefit recognized each quarter is based on the timing of the employee's election to exercise any vested stock options outstanding, which is outside Woodward's control, and the market price of Woodward's shares at the time of exercise, which is subject to market volatility.

In addition, we are subject to examination of our income tax returns by the relevant tax authorities in the jurisdictions in which we are subject to taxes. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these examinations will not have a significant effect on our operating results, financial condition, and cash flows.

Item 7A.Quantitative and Qualitative Disclosures About Market Risk

In the normal course of business, we have exposures to interest rate risk from our long-term and short-term debt, and our postretirement benefit plans, and foreign currency exchange rate risk related to our foreign operations and foreign currency transactions.

Interest Rate Risk

We use derivative instruments as risk management tools that involve little complexity, and are not used for trading or speculative purposes. In June 2013, in connection with Woodward's expected refinancing of current maturities on its existing long-term debt, Woodward entered into a treasury lock agreement with a notional amount of $25,000 that qualified as a cash flow hedge under ASC Topic 815, "Derivatives and Hedging." The objective of this derivative instrument was to hedge the risk of variability in cash flows attributable to changes in the designated benchmark interest rate over a seven-year period related to the future interest payments on a portion of anticipated future debt issuances.

A portion of our long and short-term debt is sensitive to changes in interest rates. As of September 30, 2018, our Series J Notes of $50,000 and advances on our revolving credit facility are at interest rates that fluctuate with market rates. A hypothetical 1% increase in the assumed effective interest rates that apply to the variable rate loan outstanding as of September 30, 2018 and the average borrowings on our revolving credit facility in fiscal year 2018 would cause our annual interest expense to increase approximately $2,905. A hypothetical 1% decrease in the assumed effective interest rates that apply to the variable rate loan outstanding as of September 30, 2018 and the average borrowings on our revolving credit facility in fiscal year 2018 would decrease our annual interest expense by approximately $2,905.

The discount rate and future return on plan asset assumptions used to calculate the funding status of our retirement benefit plans are also sensitive to changes in interest rates. The weighted average discount rate assumption used to value the defined benefit pension plans as of September 30, 2018 was 4.35% in the United States, 2.68% in the United Kingdom, 0.62% in Japan and 1.87% in Germany. The weighted average discount rate assumption used to value the other postretirement benefit plans was 4.30%.

In the United States, the discount rate used to determine the periodic benefit costs for the year ending September 30, 2019 is consistent with the discount rate used to determine the benefit obligation as of September 30, 2018, or 4.35%. Woodward derives this discount rate from a bond portfolio matching analysis based on recently traded, non-callable bonds rated AA or better that have at least $50 million outstanding.

In the United Kingdom, Japan, and Germany, Woodward utilizes the spot rate approach to calculate the service cost and interest cost components for determining benefit costs for the year ending September 30, 2019. The weighted average discount rate assumption used to value the service costs for the defined benefit pension plans will be 2.70% in the United Kingdom, 0.80% in Japan and 2.06% in Germany. The weighted average discount rate assumption used to value the interest costs for the defined benefit pension plans will be 2.51% in the United Kingdom, 0.42% in Japan and 1.53% in Germany.

The weighted average discount rate assumption used to value the periodic benefits costs for the other postretirement plans in for the year ending September 30, 2019 is consistent with the discount rate used to determine the benefit obligation as of September 30, 2018, or 4.30%.

The following information illustrates the sensitivity of the net periodic benefit cost and the projected accumulated benefit obligation to a change in the discount rate assumed. Amounts relating to foreign plans are translated at the spot rate on September 30, 2018. It should be noted that economic factors and conditions often affect multiple assumptions simultaneously and the effects of changes in assumptions are not necessarily linear due to factors such as the 10% corridor applied to the larger of the postretirement benefit obligation or the fair market value of plan assets when determining amortization of actuarial net gains or losses.

		Increase/(Decrease) In		
Assumption	Change	2019 Net Periodic Benefit Cost	2019 Projected Service and Interest	Accumulated Post Retirement Benefit Obligation

			Costs	as of Sept. 30, 2018
Defined benefit pension benefits:				
Change in discount rate	1% increase	$ (422)	$ 453	$ (32,672)
	1% decrease	519	(683)	41,331
Other postretirement benefits:				
Change in discount rate	1% increase	141	155	(2,132)
	1% decrease	(162)	(187)	2,458

Foreign Currency Exchange Rate Risk and Related Hedging Activities

We are impacted by changes in foreign currency exchange rates when we sell product in currencies different from the currency in which product and manufacturing costs were incurred. The functional currencies and our purchasing and sales activities primarily include USD, EUR, RMB, JPY and GBP. We may also be impacted by changes in the relative buying power of our customers, which may impact sales volumes either positively or negatively. As these currencies fluctuate against each other, and other currencies, we are exposed to foreign currency exchange rate risk on sales, purchasing transactions, and labor. Foreign currency exchange rate risk is reduced through the maintenance of local production facilities in the markets we serve, which we believe creates a natural hedge to our foreign currency exchange rate exposure. For the years ended September 30, 2018 and 2017, the percentages of our net sales denominated in a currency other than the USD were as follows:

	Percentage of Net Sales For the Year Ended September 30, 2018	Percentage of Net Sales For the Year Ended September 30, 2017
Functional currency:		
EUR	12.7%	10.3%
RMB	4.5%	5.4%
JPY	2.2%	2.5%
GBP	2.2%	1.9%
All other foreign currencies	1.6%	1.8%
	23.2%	21.9%

Currency exchange rates vary daily and often one currency strengthens against the USD while another currency weakens. Because of the complex interrelationship of our worldwide supply chains and distribution channels, it is difficult to quantify the impact of a particular change in exchange rates.

From time to time, we will enter into a foreign currency exchange rate contract to hedge against changes in foreign currency exchange rates on liabilities expected to be settled at a future date. Market risk arises from the potential adverse effects on the value of derivative instruments that result from a change in foreign currency exchange rates. We minimize this market risk by establishing and monitoring parameters that limit the types of, and degree to which we enter into, derivative instruments. We enter into derivative instruments for risk management purposes only. We do not enter into or issue derivatives for trading or speculative purposes. As of September 30, 2018 and 2017, we had no open foreign currency exchange rate contracts and all previous exchange rate derivative instruments were settled or terminated.

In May 2018, we sold in a series of private placement transaction an aggregate principal amount of $400,000 of senior unsecured notes the proceeds of which, in combination with cash on hand and borrowings under our existing revolving credit facility of $167,420, were used to finance our acquisition of L'Orange. The aggregate principal amount of $400,000 of senior unsecured notes are comprised of (a) $85,000 aggregate principal amount of its Series P Senior Notes due May 30, 2025 and bearing interest at a rate of 4.27% per annum, (b) $85,000 aggregate principal amount of its Series Q Senior Notes due May 30, 2027 and bearing interest at a rate of 4.35% per annum, (c) $75,000 aggregate principal amount of its Series R Senior Notes due May 30, 2029 and bearing interest at a rate of 4.41% per annum, (d) $75,000 aggregate principal amount of its Series S Senior Notes due May 30, 2030 and bearing interest at a rate of 4.46% per annum, and (e) $80,000 aggregate principal amount of its Series T Senior Notes due May 30, 2033 and bearing interest at a rate of 4.61% per annum (the "2018 Notes).

In connection with the incurrence of the additional debt used to finance the L'Orange acquisition, we entered into a cross currency interest rate swap agreement that synthetically converts the $167,420 floating-rate debt under our existing revolving credit agreement to Euro denominated floating-rate debt. A corresponding Euro denominated intercompany loan receivable with identical terms and notional amount as the underlying Euro denominated floating-rate debt, with a reciprocal cross currency interest rate swap, was entered into by Woodward Barbados Financing SRL ("Barbados"), a wholly owned subsidiary of Woodward, and is designated as a fair value hedge. The objective of the derivative instrument is to hedge against the foreign currency exchange risk attributable to the spot remeasurement of the Euro denominated intercompany loan.

In addition, we entered into five cross currency interest rate swap agreements that synthetically converts an aggregate principal amount of $400,000 of fixed-rate debt associated with the 2018 Notes to Euro denominated fixed-rate debt. Five corresponding intercompany loans receivable, with identical terms and amounts of each tranche of the 2018 Notes and reciprocal cross currency interest rate swaps were entered into by Woodward Barbados, which are designated as cash flow hedges. The objective of these derivative instruments is to hedge the risk of variability in cash flows attributable to the foreign currency exchange risk of cash flows for future principal and interest payments associated with the Euro denominated intercompany loans over a fifteen year period.

Changes in the fair values of the cross currency swaps designated as cash flow hedges are recognized in accumulated other comprehensive income ("OCI") and reclassified to foreign currency transaction gain or loss included in "Selling, general and administrative costs" in Woodward's Consolidated Statements of Earnings. Reclassifications out of accumulated OCI of the change in fair value occur each reporting period based upon changes in the spot rate remeasurement of the Euro denominated intercompany loan, including associated interest. For the derivative instruments designated as fair value hedges, the change in the fair value related to the cross currency basis spread, or excluded component, of the derivative instrument is recognized in accumulated OCI. The remaining change in the fair value of the derivative instrument is recognized in foreign currency transaction gain or loss included in “Selling, general and administrative costs” in Woodward’s Consolidated Statements of Earnings. The change in the fair value of the derivative instrument in foreign currency transaction gain or loss offsets the change in the spot remeasurement of the intercompany Euro denominated loan, with the initial cost of the cross currency basis spread recorded in earnings each period through the swap accrual process. In the year ended September 30, 2018, we recognized a loss related to the cross currency swaps of $23,000 in accumulated OCI. The associated earnings reclassification of $1,539 for the year ended September 30, 2018 was recorded as foreign currency transaction losses included in “Selling, general and administrative costs” in the Consolidated Statements of Earnings. The loss included in “Selling, general and administrative costs” offset the gain recognized on the spot remeasurement of the underlying Euro denominated intercompany loans, resulting in a net impact to earnings in the respective periods of zero.

On September 23, 2016, Woodward and Woodward International Holding B.V., a wholly owned subsidiary of Woodward organized under the laws of The Netherlands (the “BV Subsidiary”), entered into note purchase agreements relating to the sale by Woodward and the BV Subsidiary of an aggregate principal amount of €160,000 of senior unsecured notes in a series of private placement transactions. Woodward issued €40,000 aggregate principal amount of Woodward’s Series M Senior Notes due September 23, 2026. Woodward designated the €40,000 Series M Notes as a hedge of a foreign currency exposure of Woodward’s net investment in its EUR denominated functional currency subsidiaries. Foreign exchange gains on the Series M Notes of $838 for the fiscal year ended September 30, 2018, and losses of $2,395 for the fiscal year ended September 30, 2017 and $47 for the fiscal year ended September 30, 2016, are included in foreign currency translation adjustments within total comprehensive earnings.

In July 2016, Woodward designated a new intercompany loan of 160,000 RMB between the same two wholly owned subsidiaries as a hedge of a foreign currency exposure of the net investment of the borrower in the lender. In July 2017, the intercompany loan was repaid, resulting in a realized foreign exchange gain of $380 that was recognized within total comprehensive earnings, of which a gain of $453 was recognized in fiscal year 2017 and a loss of $73 was recognized in fiscal year 2016.

In June 2015, Woodward designated an intercompany loan of 160,000 RMB between two wholly owned subsidiaries as a hedge of a foreign currency exposure of the net investment of the borrower in the lender. In June 2016, the intercompany loan was repaid, resulting in a realized foreign exchange gain of $1,484 that was recognized within total comprehensive earnings, of which $912 was recognized in fiscal year 2016 and $572 was recognized in fiscal year 2015.

For more information on derivative instruments, see Note 7, Derivative instruments and hedging activities, in the Notes to the Consolidated Financial Statements in “Item 8 – Financial Statements and Supplementary Data.”

Our reported financial results of operations, including the reported value of our assets and liabilities, are also impacted by changes in foreign currency exchange rates. The assets and liabilities of substantially all of our subsidiaries outside the United States are translated at period end rates of exchange for each reporting period. Earnings and cash flow statements are translated at weighted-average rates of exchange. Although these translation changes have no immediate cash impact, the translation changes may impact future borrowing capacity, debt covenants, and the overall value of our net assets. In addition, we also have assets and liabilities, specifically accounts receivable, accounts payable and current inter-company receivables and payables, whose carrying amounts approximate their fair value, which are denominated in currencies other than their relevant functional currencies. Foreign currency exchange rate risk is reduced through several means, including the invoicing of customers in the same currency as the source of the products, and the prompt settlement of inter-company balances utilizing a global netting system. We recognized a net foreign currency loss of $1,608 in fiscal year 2018, a net foreign currency loss of $651 in fiscal year 2017, and a net foreign currency gain of $701 in fiscal year 2016 in “Selling, general, and administrative expenses” of our Consolidated Statements of Earnings related to these assets and liabilities.

Item 8.Financial Statements and Supplementary Data

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of

Woodward, Inc.

Fort Collins, Colorado

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Woodward, Inc. and subsidiaries (the "Company") as of September 30, 2018 and 2017, the related consolidated statements of earnings, comprehensive earnings, stockholders' equity, and cash flows, for each of the three years in the period ended September 30, 2018, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of September 30, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended September 30, 2018, 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 September 30, 2018, 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 November 9, 2018, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated 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 consolidated 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 consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ DELOITTE & TOUCHE LLP

Denver, Colorado

November 9, 2018

We have served as the Company’s auditor since 2008.

WOODWARD, INC.

CONSOLIDATED STATEMENTS OF EARNINGS

(In thousands, except per share amounts)

	Year Ended September 30,		
	2018	2017	2016
Net sales	$ 2,325,873	$ 2,098,685	$ 2,023,078
Costs and expenses:			
Cost of goods sold	1,719,675	1,526,126	1,483,960
Selling, general and administrative expenses	192,757	176,633	174,017
Research and development costs	148,279	126,519	126,170
Restructuring charges	17,013	-	-
Interest expense	31,770	27,430	26,776
Interest income	(1,674)	(1,725)	(2,025)
Other (income) expense, net (Note 16)	(1,525)	(9,045)	(12,306)
Total costs and expenses	2,106,295	1,845,938	1,796,592
Earnings before income taxes	219,578	252,747	226,486
Income tax expense	39,200	52,240	45,648
Net earnings	$ 180,378	$ 200,507	$ 180,838
Earnings per share (Note 3):			
Basic earnings per share	$ 2.93	$ 3.27	$ 2.92
Diluted earnings per share	$ 2.82	$ 3.16	$ 2.85
Weighted Average Common Shares Outstanding (Note 3):			
Basic	61,493	61,366	61,893
Diluted	63,876	63,512	63,556

See accompanying Notes to Consolidated Financial Statements

WOODWARD, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE EARNINGS

(In thousands)

	Year Ended September 30,		
	2018	2017	2016
Net earnings	$ 180,378	$ 200,507	$ 180,838
Other comprehensive earnings:			

Foreign currency translation adjustments	(12,985)	45	(6,615)
Net gain (loss) on foreign currency transactions designated as hedges of net investments in foreign subsidiaries (Note 7)	838	(1,942)	792
Taxes on changes on foreign currency translation adjustments	(367)	588	1,462
Foreign currency translation and transactions adjustments, net of tax	(12,514)	(1,309)	(4,361)
Unrealized loss on fair value adjustment of derivative instruments (Note 7)	(23,000)	-	-
Reclassification of net realized (gains) losses on derivatives to earnings (Note 7)	1,467	(72)	21
Taxes on changes on derivative transactions	456	28	(8)
Derivative adjustments, net of tax	(21,077)	(44)	13
Minimum retirement benefit liability adjustments (Note 18):			
Net gain (loss) arising during the period	13,805	22,979	(19,718)
Loss due to settlement or curtailment arising during the period	59	-	47
Amortization of:			
Prior service benefit	551	(3,470)	226
Net loss	985	2,570	1,694
Foreign currency exchange rate changes on minimum retirement benefit liabilities	367	(43)	2,239
Taxes on changes on minimum retirement benefit liability adjustments	(3,932)	(8,164)	5,613
	11,835	13,872	(9,899)
Total comprehensive earnings	$ 158,622	$ 213,026	$ 166,591

See accompanying Notes to Consolidated Financial Statements

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WOODWARD, INC.

CONSOLIDATED BALANCE SHEETS

(In thousands, except per share amounts)

	September 30, 2018	September 30, 2017
ASSETS		
Current assets:		
Cash and cash equivalents, including restricted cash of $3,635 and $0, respectively	$ 83,594	$ 87,552
Accounts receivable, less allowance for uncollectible amounts of $3,938 and $3,776, respectively	431,820	402,182
Inventories	549,596	473,505
Income taxes receivable	6,397	19,376
Other current assets	43,390	38,574
Total current assets	1,114,797	1,021,189
Property, plant and equipment, net	1,060,005	922,043
Goodwill	813,250	556,545
Intangible assets, net	700,883	171,882
Deferred income tax assets	16,570	19,950
Other assets	85,144	65,500
Total assets	$ 3,790,649	$ 2,757,109
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings	$ 153,635	$ 32,600
Accounts payable	226,285	232,788
Income taxes payable	16,745	6,774
Accrued liabilities	194,513	155,072
Total current liabilities	591,178	427,234
Long-term debt, less current portion	1,092,397	580,286
Deferred income tax liabilities	170,915	33,408
Other liabilities	398,055	344,798
Total liabilities	2,252,545	1,385,726
Commitments and contingencies (Note 20)		
Stockholders' equity:		
Preferred stock, par value $0.003 per share, 10,000 shares authorized, no shares issued	-	-
Common stock, par value $0.001455 per share, 150,000 shares authorized, 72,960 shares issued	106	106
Additional paid-in capital	185,705	163,836
Accumulated other comprehensive losses	(74,942)	(53,186)
Deferred compensation	8,431	7,135
Retained earnings	1,966,643	1,820,268
	2,085,943	1,938,159
Treasury stock at cost, 11,203 shares and 11,739 shares, respectively	(539,408)	(559,641)
	(8,431)	(7,135)

Treasury stock held for deferred compensation, at cost, 202 shares and 186 shares, respectively		
Total stockholders' equity	1,538,104	1,371,383
Total liabilities and stockholders' equity	$ 3,790,649	$ 2,757,109

See accompanying Notes to Consolidated Financial Statements.

WOODWARD, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended September 30,		
	2018	2017	2016
Cash flows from operating activities:			
Net earnings	$ 180,378	$ 200,507	$ 180,838
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation and amortization	116,131	80,917	69,036
(Gain) loss due to curtailment or settlement of postretirement plan	(330)	-	47
Net gain on sales of assets	(1,106)	(3,604)	(4,431)
Stock-based compensation	18,229	17,282	15,122
Deferred income taxes	(30,177)	22,772	(52,744)
Net loss (gain) on derivatives reclassified from accumulated comprehensive earnings into earnings	1,467	(72)	21
Proceeds from formation of joint venture (Note 5)	-	-	250,000
Changes in operating assets and liabilities:			
Accounts receivable	(6,494)	(53,151)	(9,190)
Inventories	(7,660)	(10,857)	(17,658)
Accounts payable and accrued liabilities	(2,284)	64,659	17,461
Income taxes	35,641	3,323	(834)
Retirement benefit obligations	(4,653)	(2,932)	(3,416)
Other	150	(11,307)	(8,873)
Net cash provided by operating activities	299,292	307,537	435,379
Cash flows from investing activities:			
Payments for purchase of property, plant, and equipment	(127,140)	(92,336)	(175,692)
Proceeds from sale of assets	1,923	3,743	6,664
Proceeds from sales of short-term investments	9,088	5,313	-
Payments for purchases of short-term investments	(9,323)	(8,586)	(4,918)
Business acquisitions, net of cash acquired	(771,115)	-	-
Net cash used in investing activities	(896,567)	(91,866)	(173,946)
Cash flows from financing activities:			
Cash dividends paid	(34,003)	(29,745)	(26,606)
Proceeds from sales of treasury stock	9,132	14,195	15,892
Payments for repurchases of common stock	-	(71,751)	(125,541)
Borrowings on revolving lines of credit and short-term borrowings	1,930,261	1,506,000	695,000
Payments on revolving lines of credit and short-term borrowings	(1,691,934)	(1,630,100)	(890,896)

Proceeds from issuance of long-term debt	400,000	-	179,308
Payments of long-term debt and capital lease obligations	(421)	(412)	(107,287)
Payments of debt financing costs	(1,494)	-	(863)
Payment for forward option derivative instrument	(5,543)	-	-
Net cash provided by (used in) financing activities	605,998	(211,813)	(260,993)
Effect of exchange rate changes on cash and cash equivalents	(12,681)	2,604	(1,552)
Net change in cash and cash equivalents	(3,958)	6,462	(1,112)
Cash and cash equivalents at beginning of year	87,552	81,090	82,202
Cash and cash equivalents, including restricted cash, at end of period	$ 83,594	$ 87,552	$ 81,090

See accompanying Notes to Consolidated Financial Statements

WOODWARD, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands)

s			Stockholders' equity								
					Accumulated other comprehensive (loss) earnings						
mon k	Treasury stock	Treasury stock held for deferred compensation	Common stock	Additional paid-in capital	Foreign currency translation adjustments	Unrealized derivative gains (losses)	Minimum retirement benefit liability adjustments	Total accumulated other comprehensive (loss) earnings	Deferred compensation	Retained earnings	Trea sto cost
60	(9,763)	(173)	$ 106	$ 131,231	$ (21,610)	$ 166	$ (30,014)	$ (51,458)	$ 4,322	$ 1,495,274	$ (4
	-	-	-	-	-	-	-	-	-	180,838	-
	-	-	-	-	(4,361)	13	(9,899)	(14,247)	-	-	-
	-	-	-	-	-	-	-	-	-	(26,606)	-
	(2,660)	-	-	-	-	-	-	-	-	-	(1
	732	-	-	(10,137)	-	-	-	-	-	-	2(
	317	-	-	5,319	-	-	-	-	-	-	8,
	-	-	-	35	-	-	-	-	-	-	-
	-	-	-	15,122	-	-	-	-	-	-	-
	-	(25)	-	-	-	-	-	-	1,269	-	-

	-	41	-	-	-	-	-	-	(502)	-	-
60	(11,374)	(157)	$ 106	$ 141,570	$ (25,971)	$ 179	$ (39,913)	$ (65,705)	$ 5,089	$ 1,649,506	$ (5
	-	-	-	-	-	-	-	-	-	200,507	-
	-	-	-	-	(1,309)	(44)	13,872	12,519	-	-	-
	-	-	-	-	-	-	-	-	-	(29,745)	-
	(1,056)	-	-	-	-	-	-	-	-	-	(7
	466	-	-	(2,257)	-	-	-	-	-	-	17
	199	-	-	6,501	-	-	-	-	-	-	7.
	26	(26)	-	740	-	-	-	-	1,767	-	1.
	-	-	-	17,282	-	-	-	-	-	-	-
	-	(3)	-	-	-	-	-	-	298	-	-
	-	-	-	-	-	-	-	-	(19)	-	-
60	(11,739)	(186)	$ 106	$ 163,836	$ (27,280)	$ 135	$ (26,041)	$ (53,186)	$ 7,135	$ 1,820,268	$ (5

	-	-	-	-	-	-	-	-	-	180,378	-
	-	-	-	-	(12,514)	(21,077)	11,835	(21,756)	-	-	-
	-	-	-	-	-	-	-	-	-	(34,003)	-
	334	-	-	(3,517)	-	-	-	-	-	-	1
	202	-	-	7,157	-	-	-	-	-	-	7
	-	-	-	18,229	-	-	-	-	-	-	-
	-	(17)	-	-	-	-	-	-	1,318	-	-
	-	1	-	-	-	-	-	-	(22)	-	-
60	(11,203)	(202)	$ 106	$ 185,705	$ (39,794)	$ (20,942)	$ (14,206)	$ (74,942)	$ 8,431	$ 1,966,643	$ (5

See accompanying Notes to Consolidated Financial Statements

WOODWARD, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(In thousands, except per share amounts)

Note 1. Operations and summary of significant accounting policies

Basis of presentation

The Consolidated Financial Statements are prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") and include the accounts of Woodward, Inc. and its subsidiaries (collectively "Woodward" or "the Company"). Dollar amounts contained in these Consolidated Financial Statements are in thousands, except per share amounts.

Nature of operations

Woodward enhances the global quality of life, creating innovative energy control solutions that optimize the performance, efficiency and emissions of its customers' products. Woodward is an independent designer, manufacturer, and service provider of energy control and optimization solutions. Woodward designs, produces and services reliable, efficient, low-emission, and high-performance energy control products for diverse applications in challenging environments. Woodward has significant production and assembly facilities in the United States, Europe and Asia, and promotes its products and services through its worldwide locations.

Woodward's strategic focus is providing energy control and optimization solutions for the aerospace and industrial markets. The precise and efficient control of energy, including motion, fluid, combustion and electrical energy, is a growing requirement in the markets Woodward serves. Woodward's customers look to it to optimize the efficiency, emissions and operation of power equipment in both commercial and defense operations. Woodward's core technologies leverage well across its markets and customer applications, enabling it to develop and integrate cost-effective and state-of-the-art fuel, combustion, fluid, actuation and electronic systems. Woodward focuses its solutions and services primarily on serving original equipment manufacturers ("OEMs") and equipment packagers, partnering with them to bring superior component and system solutions to their demanding applications. Woodward also provides aftermarket repair, maintenance, replacement and other service support for its installed products.

Woodward's components and integrated systems optimize performance of commercial aircraft, defense aircraft, military ground vehicles and other equipment, gas and steam turbines, wind turbines, including converters and power grid related equipment, industrial diesel, gas, bio-diesel and dual-fuel reciprocating engines, and electrical power systems. Woodward's innovative motion, fluid, combustion and electrical energy control systems help its customers offer more cost-effective, cleaner, and more reliable equipment.

Summary of significant accounting policies

Principles of consolidation: These Consolidated Financial Statements are prepared in accordance with U.S. GAAP and include the accounts of Woodward and its wholly and majority-owned subsidiaries. Transactions within and between these companies are eliminated.

Use of estimates: The preparation of the Consolidated Financial Statements requires management to make use of estimates and assumptions that affect the reported amount of assets and liabilities, at the date of the financial statements and the reported revenues and expenses recognized during the reporting period, and certain financial statement disclosures. Significant estimates include allowances for uncollectible amounts, net realizable value of inventories, customer rebates earned, useful lives of property and identifiable intangible assets, the evaluation of impairments of property, identifiable intangible assets and goodwill, the provision for income tax and related valuation reserves, the valuation of assets and liabilities acquired in business combinations, assumptions used in the determination of the funded status and annual expense of pension and postretirement employee benefit plans, the valuation of stock compensation instruments granted to employees, and contingencies. Actual results could differ from those estimates.

Foreign currency exchange rates: The assets and liabilities of substantially all subsidiaries outside the United States are translated at fiscal year-end rates of exchange, and earnings and cash flow statements are translated at weighted-average rates of exchange. The exchange rate in effect at the time of the cash flow is used for significant or infrequent cash flows, such as payments for a business acquisition, for which the use of weighted-average rates of exchange would result in a substantially different cash flow. Translation adjustments are accumulated with other comprehensive (losses) earnings as a separate component of stockholders' equity and are presented net of tax effects in the Consolidated Statements of

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Stockholders' Equity. The effects of changes in foreign currency exchange rates on loans between consolidated subsidiaries that are considered permanent in nature are also accumulated with other comprehensive earnings, net of tax.

The Company is exposed to market risks related to fluctuations in foreign currency exchange rates because some sales transactions, and certain of the assets and liabilities of its domestic and foreign subsidiaries, are denominated in foreign currencies. Selling, general, and administrative expenses include a net foreign currency loss of $1,608 in fiscal year 2018, net foreign currency loss of $651 in fiscal year 2017, and a net foreign currency gain of $701 in fiscal year 2016.

Revenue recognition: Woodward recognizes revenue upon shipment or delivery of products or services and when collectability is reasonably assured. Delivery is upon completion of manufacturing, customer acceptance, and the transfer of the risks and rewards of ownership. In countries whose laws provide for retention of some form of title by sellers, enabling recovery of goods in the event of customer default on payment, product delivery is considered to have occurred when the customer has assumed the risks and rewards of ownership of the products.

Occasionally, Woodward transfers title of product to customers, but retains substantive performance obligations such as completion of product testing, customer acceptance or in some instances regulatory acceptance. In addition, occasionally customers pay Woodward for products or services prior to Woodward satisfying its performance obligation. Under these circumstances, revenue is deferred until the performance obligations are satisfied. In addition, service revenue is also recognized upon completion of applicable performance obligations.

Certain Woodward products include incidental software or firmware essential to the performance of the product as designed, which are treated as units of accounting associated with the related tangible product with which the software is included. Woodward does not generally sell software on a standalone basis, although software upgrades, if any, are generally paid for by the customer.

Revenue for certain non-recurring engineering projects is recognized when contractually specified milestones are achieved.

Product freight costs are included in cost of goods sold. Freight costs charged to customers are included in net sales.

Taxes collected from customers and remitted to government authorities are excluded from revenue and are recorded as liabilities until the taxes are remitted to the appropriate U.S. or foreign government authority.

Net sales generated through shipment of tangible products to customers represents more than 90% of total net sales for fiscal years 2018, 2017 and 2016.

For discussion of the impacts of the adoption of Accounting Standards Codification Topic 606 on revenue recognition, see Note 2, New accounting standards.

Customer payments: Woodward occasionally agrees to make payments to certain customers in order to participate in anticipated sales activity. Payments made to customers are accounted for as a reduction of revenue unless they are made in exchange for identifiable goods or services with fair values that can be reasonably estimated. Reductions in revenue associated with these customer payments are recognized immediately to the extent that the payments cannot be attributed to anticipated future sales, and are recognized in future periods to the extent that the payments relate to anticipated future sales. Such determinations are based on the facts and circumstances underlying each payment.

Stock-based compensation: Compensation cost relating to stock-based payment awards made to employees and directors is recognized in the financial statements using a fair value method. Non-qualified stock option awards and restricted stock awards are issued under Woodward's stock-based compensation plans. The cost of such awards, measured at the grant date, is based on the estimated fair value of the award.

Forfeitures are estimated at the time of each grant in order to estimate the portion of the award that will ultimately vest. The estimate is based on Woodward's historical rates of forfeitures and is updated periodically. The portion of the award that is ultimately expected to vest is recognized as expense over the requisite service periods, which is generally the vesting period of the awards.

Research and development costs: Company funded expenditures related to new product development, and significant product enhancement and/or upgrade activities are expensed as incurred and are separately reported in the Consolidated Statements of Earnings.

Income taxes: Deferred income taxes are provided for the temporary differences between the financial reporting basis and the tax basis of Woodward's assets, liabilities, and certain unrecognized gains and losses recorded in accumulated other comprehensive (losses) earnings. Woodward provides for taxes that may be payable if undistributed earnings of overseas subsidiaries were to be remitted to the United States, except for those earnings that it considers to be indefinitely invested.

Cash equivalents: Highly liquid investments purchased with an original maturity of three months or less are considered to be cash equivalents.

Cash and cash equivalents are maintained with multiple financial institutions. Generally, these deposits may be redeemed upon demand and are maintained with financial institutions with reputable credit and therefore bear minimal credit risk. Woodward holds cash and cash equivalents at financial institutions in excess of amounts covered by the Federal Depository Insurance Corporation (the "FDIC"), sometimes invests excess cash in money market funds or other highly liquid investments not insured by the FDIC, and holds cash and cash equivalents outside the United States that are not insured by the FDIC.

Accounts receivable: Almost all of Woodward's sales are made on credit and result in accounts receivable, which are recorded at the amount invoiced and are generally not collateralized. In the normal course of business, not all accounts receivable are collected and, therefore, an allowance for uncollectible amounts is provided equal to the amount that Woodward believes ultimately will not be collected, either from credit risk or other adjustments to the original selling price or anticipated cash discounts. In establishing the amount of the allowance related to the credit risk of accounts receivable, customer-specific information is considered related to delinquent accounts, past loss experience, bankruptcy filings, deterioration in the customer's operating results or financial position, and current economic conditions. Bad debt losses are deducted from the allowance, and the related accounts receivable balances are written off when the receivables are deemed uncollectible. Recoveries of accounts receivable previously written off are recognized when received. The allowance associated with anticipated other adjustments to the selling price or cash discounts is also established and is included in the allowance for uncollectible amounts. In establishing this amount, both customer-specific information as well as historical experience is considered.

In coordination with its customers and when terms are considered favorable to Woodward, Woodward from time to time transfers ownership to collect amounts due to Woodward for outstanding accounts receivable to third parties in exchange for cash. When the transfer of accounts receivable meets the criteria of Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC') Topic 860-10, "Transfers and Servicing," and are without recourse, it is recognized as a sale and the accounts receivable is derecognized.

Consistent with common business practice in China, Woodward's Chinese subsidiary accepts from Chinese customers, in settlement of certain customer accounts receivable, bankers' acceptance notes issued by Chinese banks that are believed to be creditworthy. Bankers' acceptance notes are financial instruments issued by Chinese financial institutions as part of financing arrangements between the financial institution and a customer of the financial institution. Bankers' acceptance notes represent a commitment by the issuing financial institution to pay a certain amount of money at a specified future maturity date to the legal owner of the bankers' acceptance note as of the maturity date. The maturity date of bankers' acceptance notes varies, but it is Woodward's policy to only accept bankers' acceptance notes with maturity dates no more than 180 days from the date of Woodward's receipt of such draft. The issuing financial institution is the obligor, not Woodward's customers. Upon Woodward's acceptance of a banker's acceptance note from a customer, such customer has no further obligation to pay Woodward for the related accounts receivable balance. Woodward only accepts bankers' acceptance notes issued by banks that are believed to be creditworthy and to which the credit risks associated with the bankers' acceptance notes are believed to be minimal.

The composition of Woodward's accounts receivable at September 30, 2018 and September 30, 2017 follows:

	September 30, 2018	September 30, 2017
Accounts receivable from:		
Customers	$ 412,567	$ 367,715
Other (Chinese financial institutions)	23,191	38,243
Allowance for uncollectible customer amounts	(3,938)	(3,776)
	$ 431,820	$ 402,182

Inventories: Inventories are valued at the lower of cost or net realizable value, with cost being determined using methods that approximate a first-in, first-out basis.

Short-term investments: From time to time, certain of Woodward's foreign subsidiaries will invest excess cash in short-term time deposits with a fixed maturity date of longer than three months but less than one year from the date of the deposit. Woodward believes that the investments are with creditworthy financial institutions. Amounts with maturities of less than 365 days are classified as "Other current assets."

Property, plant, and equipment: Property, plant, and equipment are recorded at cost and are depreciated over the estimated useful lives of the assets. Assets are generally depreciated using the straight-line method. Assets are tested for recoverability whenever events or circumstances indicate the carrying value may not be recoverable.

Estimated lives over which fixed assets are generally depreciated at September 30, 2018 were as follows:

Land improvements	3	-	20	years
Buildings and improvements	3	-	40	years
Leasehold improvements	1	-	10	years
Machinery and production equipment	3	-	20	years
Computer equipment and software	1	-	10	years
Office furniture and equipment	3	-	10	years
Other	3	-	10	years

Included in computer equipment and software are Woodward's enterprise resource planning ("ERP") systems, which have an estimated useful life of 10 years. All other computer equipment and software is generally depreciated over three to five years.

Purchase accounting: Business combinations are accounted for using the purchase method of accounting. Under the purchase method, assets and liabilities, including intangible assets, are recorded at their fair values as of the acquisition date. Acquisition costs in excess of amounts assigned to assets acquired and liabilities assumed are recorded as goodwill. Transaction-related costs associated with business combinations are expensed as incurred.

Goodwill: Woodward tests goodwill for impairment at the reporting unit level on an annual basis and more often if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. Based on the relevant U.S. GAAP authoritative guidance, Woodward aggregates components of a single operating segment into a reporting unit, if appropriate. The impairment tests consist of comparing the implied fair value of each reporting unit with its carrying amount that includes goodwill. If the carrying amount of the reporting unit exceeds its implied fair value, Woodward compares the implied fair value of goodwill with the recorded carrying amount of goodwill. If the carrying amount of goodwill exceeds the implied fair value of goodwill, an impairment loss would be recognized to reduce the carrying amount to its implied fair value. Based on the results of Woodward's goodwill impairment testing it has recorded no impairment charges in the year ended September 30, 2018 or since the goodwill was originally recognized.

Other intangibles: Other intangibles are recognized apart from goodwill whenever an acquired intangible asset arises from contractual or other legal rights, or whenever it is capable of being separated or divided from the acquired entity and sold, transferred, licensed, rented, or exchanged, either individually or in combination with a related contract, asset, or liability. Woodward amortizes the cost of other intangibles over their useful lives unless such lives are deemed indefinite.

The cost of amortizable other intangibles are amortized over their respective useful life using patterns that reflect the periods over which the economic benefits of the assets are expected to be realized. Amortization expense is allocated to cost of goods sold and selling, general, and administrative expenses based on the nature of the intangible asset. Amortizable other intangible assets are reviewed for impairment whenever an event occurs or circumstances change indicating that the related carrying amount of the other intangible asset may not be recoverable. Impairment losses are recognized if the carrying amount of an intangible is both not recoverable and exceeds its fair value. Intangible assets with indefinite lives are tested annually for impairment and written down to fair value as required. Woodward has recorded no impairment charges related to its other intangibles as of September 30, 2018 or since the other intangibles originally recorded.

Estimated lives over which intangible assets are amortized at September 30, 2018 were as follows:

Backlog			1	year
Customer relationships and contracts	9	-	30	years
Intellectual property	10	-	17	years
Process technology	8	-	30	years
Other	3	-	15	years

Impairment of long-lived assets: Woodward reviews the carrying amount of its long-lived assets or asset groups to be used in operations whenever events or changes in circumstances indicate that the carrying amount of the assets might not be recoverable. Factors that would necessitate an impairment assessment include a significant adverse change in the extent or manner in which an asset is used, a significant adverse change in legal factors or the business climate that could affect the value of the asset, or a significant decline in the observable market value of an asset, among others.

If such facts indicate a potential impairment, the Company would assess the recoverability of an asset group by determining if the carrying amount of the asset group exceeds the sum of the projected undiscounted cash flows expected to result from the use and eventual disposition of the assets over the remaining economic life of the primary asset in the asset group. If the recoverability test indicates that the carrying amount of the asset group is not recoverable, the Company will estimate the fair value of the asset group using appropriate valuation methodologies, which would typically include an estimate of discounted cash flows. Any impairment would be measured as the difference between the asset groups carrying amount and its estimated fair value. There were no impairment charges recorded in fiscal years 2018, 2017 or 2016.

Investment in marketable equity securities: Woodward holds marketable equity securities related to its deferred compensation program. Based on Woodward's intentions regarding these instruments, marketable equity securities are classified as trading securities. The trading securities are reported at fair value, with realized gains and losses recognized in "Other (income) expense, net." The trading securities are included in "Other assets." The associated obligation to provide benefits under the deferred compensation program is included in "Other liabilities."

Investments in unconsolidated subsidiaries: Investments in, and operating results of, entities in which Woodward does not have a controlling financial interest or the ability to exercise significant influence over the operations are included in the financial statements using the cost method of accounting. Investments and operating results of entities in which Woodward does not have a controlling interest but does have the ability to exercise significant influence over operations are included in the financial statements using the equity method of accounting.

Deferred compensation: The Company maintains a deferred compensation plan, or "rabbi trust," as part of its overall compensation package for certain employees.

Deferred compensation obligations will be settled either by delivery of a fixed number of shares of Woodward's common stock (in accordance with certain eligible members' irrevocable elections) or in cash. Woodward has contributed shares of its common stock into a trust established for the future settlement of deferred compensation obligations that are payable in shares of Woodward's common stock. Common stock held by the trust is reflected in the Consolidated Balance Sheet as "Treasury stock held for deferred compensation" and the related deferred compensation obligation is reflected as a separate component of equity in amounts equal to the fair value of the common stock at the dates of contribution. These accounts are not adjusted for subsequent changes in the fair value of the common stock. Deferred compensation obligations that will be settled in cash are accounted for on an accrual basis in accordance with the terms of the underlying contract and are reflected in the Consolidated Balance Sheet as "Other liabilities."

Derivatives: The Company is exposed to various market risks, including the effect of changes in interest rates, foreign currency exchange rates, changes in certain commodity prices and fluctuations in various producer indices. From time to time, Woodward enters into derivative instruments for risk management purposes only, including derivatives designated as accounting hedges and/or those utilized as economic hedges. Woodward does not enter into or issue derivatives for trading or speculative purposes.

To mitigate interest rate risk, the Company has utilized derivative instruments, such as treasury lock agreements to lock in fixed rates on future debt issuances, which qualify as cash flow or fair value hedges to mitigate the risk of variability in cash flows related to future interest payments attributable to changes in the designated benchmark rate. The Company records all such interest rate hedge instruments on the balance sheet at fair value. Cash flows related to the instrument designated as a qualifying hedge are reflected in the accompanying Consolidated Statements of Cash Flows in the same categories as the cash flows from the items being hedged. Accordingly, cash flows relating to the settlement of interest rate derivatives hedging the forecasted future interest payments on debt have been reflected upon settlement as a component of financing cash flows. The resulting gain or loss from such settlement is deferred to other comprehensive income and reclassified to interest expense over the term of the underlying debt. This reclassification of the deferred gains and losses impacts the interest expense recognized on the underlying debt that was hedged and is therefore reflected as a component of operating cash flows in periods subsequent to settlement. The periodic settlement of interest rate derivatives hedging outstanding variable rate debt is recorded as an adjustment to interest expense and is therefore reflected as a component of operating cash flows.

From time to time, in order to hedge against foreign currency exposure, Woodward designates certain non-derivative financial instrument loans as net investment hedges. Foreign exchange gains or losses on these loans are recognized in foreign currency translation adjustments within total comprehensive (losses) earnings. Also, to hedge against the foreign currency exposure attributable to the spot remeasurement its Euro denominated intercompany loans, Woodward has entered into derivative instruments in fair value hedging relationships, and derivative instruments in cash flow hedging relationships to hedge the risk of variability in cash flows attributable to the foreign currency exchange risk of cash flows for future principal and interest payments associated with its Euro denominated intercompany loans.

Further information on net investment hedges and derivative instruments in fair value and cash flow hedging relationships, including the Company’s policy in accounting for these derivatives, can be found at Note 7, Derivative instruments and hedging activities.

Financial instruments: The Company’s financial instruments include cash and cash equivalents, short-term investments, investments in the deferred compensation program, notes receivable from municipalities, investments in term deposits, cross currency interest rate swaps and debt. Because of their short-term maturity, the carrying amount of cash and cash equivalents, and short-term debt approximate fair value. The fair value of investments in the deferred compensation program are adjusted to fair value based on the quoted market prices for the investments in the various mutual funds owned. The fair value of the long-term notes from municipalities are estimated based on a model that discounts future principal and interest payments received at interest rates available to the Company at the end of the period for similarly rated municipal notes of similar maturity. The fair value of term deposits are estimated based on a model that discounts future principal and interest payments received at interest rates available to the Company at the end of the period for similar term deposits with the same maturity in the same jurisdictions. The fair value of the cross currency interest rate swaps are determined using a market approach that is based on observable inputs other than quoted market prices, including contract terms, interest rates, currency rates, and other market factors. The fair value of long-term debt is estimated based on a model that discounts future principal and interest payments at interest rates available to the Company at the end of the period for similar debt with the same maturity. Further information on the fair value of financial instruments can be found at Note 6, Financial instruments and fair value measurements.

Financial assets and liabilities recorded at fair value in the Consolidated Balance Sheets are categorized based upon a fair value hierarchy established by U.S. GAAP, which prioritizes the inputs used to measure fair value into the following levels:

Level 1: Inputs based on quoted market prices in active markets for identical assets or liabilities at the measurement date.

Level 2: Quoted prices included in Level 1, such as quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable and can be corroborated by observable market data.

Level 3: Inputs reflect management's best estimates and assumptions of what market participants would use in pricing the asset or liability at the measurement date. The inputs are unobservable in the market and significant to the valuation of the instruments.

Postretirement benefits: The Company provides various benefits to certain current and former employees through defined benefit pension and postretirement plans. For financial reporting purposes, net periodic benefits expense and related obligations are calculated using a number of significant actuarial assumptions. Changes in net periodic expense and funding status may occur in the future due to changes in these assumptions. The funded status of defined pension and postretirement plans recognized in the statement of financial position is measured as the difference between the fair market value of the plan assets and the benefit obligation. For a defined benefit pension plan, the benefit obligation is the projected benefit obligation; for any other defined benefit postretirement plan, such as a retiree health care plan, the benefit obligation is the accumulated benefit obligation. Any over-funded status is recognized as an asset and any underfunded status is recognized as a liability.

Projected benefit obligation is the actuarial present value as of the measurement date of all benefits attributed by the plan benefit formula to employee service rendered before the measurement date using assumptions as to future compensation levels if the plan benefit formula is based on those future compensation levels. The accumulated benefit obligation is the actuarial present value of benefits (whether vested or unvested) attributed by the plan benefit formula to employee service rendered before the measurement date and based on employee service and compensation, if applicable, prior to that date. The accumulated benefit obligation differs from the projected benefit obligation in that it includes no assumption about future compensation levels.

Note 2. New accounting standards

From time to time, the Financial Accounting Standards Board ("FASB") or other standards setting bodies issue new accounting pronouncements. Updates to the ASC are communicated through issuance of an Accounting Standards Update ("ASU").

In August 2018, the FASB issued ASU 2018-14, "Compensation – Retirement Benefits – Defined Benefit Plans - General (Topic 715-20): Disclosure Framework – Changes to the Disclosure Requirements for Defined Benefit Plan." ASU 2018-14 amends ASC 715 to add, remove, and modify disclosure requirements related to defined benefit pension and other postretirement plans. The ASU's changes to disclosures aim to improve the effectiveness of ASC 715's disclosure requirements under the FASB's disclosure framework project. ASU 2018-14 is effective for public entities for fiscal years beginning after December 15, 2020 (fiscal year 2022 for Woodward). ASU 2018-14 does not impact the interim disclosure requirements of ASC 715. The amendments in ASU 2018-14 should be applied on a retrospective basis to all periods presented. Early adoption is permitted. Woodward will adopt the new and modified disclosures requirements of this new guidance in fiscal year 2022.

Also in August 2018, the FASB issued ASU 2018-13, "Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement." ASU 2018-13 amends ASC 820 to add, remove, and modify fair value measurement disclosure requirements. The ASU's changes to disclosures aim to improve the effectiveness of ASC 820's disclosure requirements under the aforementioned FASB disclosure framework project. ASU 2018-13 is effective for all entities for fiscal years beginning after December 15, 2019 (fiscal year 2021 for Woodward), including interim periods within the year of adoption. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. Early adoption is permitted for any eliminated or modified disclosures prescribed by the ASU. Woodward early adopted ASU

2018-13 in the fourth quarter of fiscal year 2018 and it had no impact on its fair value measurement disclosures.

In March 2018, the FASB issued ASU 2018-05, "Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118." ASU 2018-05 formally amended ASC Topic 740, Income Taxes ("ASC 740") for the guidance previously provided by SEC Staff Accounting Bulletin 118 ("SAB 118"). SAB 118 expressed views of the SEC regarding ASC 740 in the reporting period that includes the enactment date of H.R.1, "An Act to Provide for Reconciliation Pursuant to Titles II and V of the Concurrent Resolution on the Budget for Fiscal Year 2018" (the "Tax Act") (previously known as "The Tax Cuts and Jobs Act"). The Company adopted SAB 118 in the first quarter of fiscal year 2018 and therefore, the Company's subsequent adoption of ASU 2018-05 in the second quarter of fiscal year 2018 had no impact on its accounting for income taxes in fiscal year 2018.

In February 2018, the FASB issued ASU 2018-02, "Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income." ASU 2018-02 allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the enactment of tax reform under the Tax Act and provides guidance on the disclosure requirements regarding the stranded tax effects. The amendments in ASU 2018-02 are effective for all entities for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption is permitted. The amendments in ASU 2018-02 may be applied retrospectively in the period of adoption to all periods in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Act is recognized or may be applied as of the beginning of the period of adoption. Woodward is currently assessing the impact of the adoption of the new guidance and has not yet elected the method of adoption it will apply. When adopted, if Woodward elects to reclassify under ASU 2018-02, a portion of accumulated other comprehensive earnings would be reclassified to retained earnings.

In August 2017, the FASB issued ASU 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities." ASU 2017-12 is intended to more closely align the financial statement reporting of hedging relationships with the economic results of an entity's risk management activities and to make certain targeted improvements to simplify the application of hedge accounting guidance in current U.S. GAAP. ASU 2017-12 is also intended to increase standardization of financial statement disclosures including requiring a tabular disclosure of the income statement effects of fair value and cash flow hedges. Woodward early adopted the new guidance in the first quarter of fiscal year 2018. Initial application of the new guidance did not have any impact on Woodward's hedging arrangements or on the disclosures related to such arrangements as of the date of adoption and through the second quarter of fiscal year 2018. In the third quarter of fiscal year 2018, Woodward entered into new hedging arrangements and incorporated the provisions of this guidance in those hedging arrangements and related disclosures as discussed in Note 7, Derivative instruments and hedging activities.

In March 2017, the FASB issued ASU 2017-07, "Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost." ASU 2017-07 requires that the service cost component of net periodic benefit costs from defined benefit and other postretirement benefit plans be included in the same statement of earnings captions as other compensation costs arising from services rendered by the covered employees during the period. The other components of net benefit cost will be presented in the statement of earnings separately from service costs. ASU 2017-07 is effective for fiscal years beginning after December 31, 2017 (fiscal year 2019 for Woodward). Following adoption, only service costs will be eligible for capitalization into manufactured inventories, which should reduce diversity in practice. The amendments of ASU 2017-07 should be applied retrospectively for the presentation of the service cost component and the other components of net periodic benefit costs from defined benefit and other postretirement benefit plans in the statement of earnings and prospectively, on and after the effective date, for the capitalization of the service cost component into manufactured inventories. Woodward will adopt the new guidance in fiscal year 2019, and expects it to have no impact on net earnings.

In November 2016, the FASB issued ASU 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash (a consensus of the FASB Emerging Issues Task Force)." ASU 2016-18 provides authoritative guidance requiring that restricted cash be included with cash and cash equivalents when reconciling the beginning of period and end of period amounts reported in the statement of cash flows. The guidance is applied retrospectively to all periods presented and is effective for annual reporting periods beginning after December 15, 2017 (fiscal year 2019 for Woodward), and interim periods within those annual periods. In the third quarter of fiscal year 2018, the Company's Consolidated Balance Sheet included restricted cash, and as a result, the Company concurrently early adopted this guidance in the third quarter of fiscal year 2018. As a result of the adoption, the Company has included restricted cash of $3,635 as of September 30, 2018 in the end of year amount reported in the statement of cash flows for the fiscal year ended September 30, 2018. There was no restricted cash in the beginning of year balance for the fiscal year ended September 30, 2018, or in the beginning of year or end of year balances for both the fiscal years ended September 30, 2017 and September 30, 2016.

In October 2016, the FASB issued ASU 2016-16, "Accounting for Income Taxes: Intra-Entity Asset Transfers of Assets Other than Inventory." ASU 2016-16 eliminates the current U.S. GAAP exception deferring the tax effects of intercompany asset transfers (other than inventory) until the transferred asset is sold to a third party or otherwise recovered through use. After adoption of ASU 2016-16, Woodward will recognize the tax consequences of intercompany asset transfers in the buyer's and seller's tax jurisdictions when the transfer occurs, even though the pre-tax effects of these transactions are eliminated in consolidation. ASU 2016-16 is effective for fiscal years beginning after December 15, 2017 (fiscal year 2019 for Woodward), including interim periods within the year of adoption. Woodward will adopt the new guidance in fiscal year 2019. Modified retrospective adoption is required with any cumulative-effect adjustment recorded to retained earnings as of the beginning of the period of adoption. Woodward currently anticipates the adoption of ASU 2016-16 will result in balance sheet reclassifications, but based on Woodward's current transactional activity, such adjustments are not expected to be significant.

In June 2016, the FASB issued ASU 2016-13, "Measurement of Credit Losses on Financial Instruments." ASU 2016-13 adds a current expected credit loss ("CECL") impairment model to U.S. GAAP that is based on expected losses rather than incurred losses. Modified retrospective adoption is required with any cumulative-effect adjustment recorded to retained earnings as of the beginning of the period of adoption. ASU 2016-13 is effective for fiscal years beginning after December 15, 2019 (fiscal year 2021 for Woodward), including interim periods within the year of adoption. Early adoption is permitted for fiscal years beginning after December 15, 2018 (fiscal year 2020 for Woodward), including interim periods within those fiscal years. Woodward will adopt the new guidance in fiscal year 2021. Woodward does not expect the application of the CECL impairment model to have a significant impact on Woodward's allowance for uncollectible amounts for accounts receivable and notes receivable from municipalities.

In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)." The purpose of ASU 2016-02 is to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. In addition, ASU 2016-02 modifies the definition of a lease to clarify that an arrangement contains a lease when such arrangement conveys the right to control the use of an identified asset. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018 (fiscal year 2020 for Woodward), including interim periods within the year of adoption. Originally under ASU 2016-02, an organization was required upon adoption to recognize and measure leases beginning in the earliest period presented using a modified retrospective approach and restate the financial statements for all periods presented. In July 2018, the FASB issued ASU 2018-11, which amends ASU 2016-02 to provide organizations with an additional (and optional) transition method whereby it may elect to recognize and measure leases by applying the cumulative impact of adopting ASU 2016-02 to the opening retained earnings balance in the period of adoption, thereby removing the requirement that the financial statements of prior periods be restated. Although early adoption is permitted, Woodward expects to adopt the new guidance in fiscal year 2020. Woodward expects that it will elect to not restate fiscal years 2018 and 2019 and will recognize the cumulative impact of adopting the standard in Woodward's opening retained earnings for fiscal year 2020, but has not made a final determination on its future adoption method. Woodward is currently assessing the impact this guidance may have on its Consolidated Financial Statements, including which of its existing lease arrangements will be impacted by the new guidance and whether other arrangements not currently classified as leases may become subject to the guidance of ASU 2016-02. Rent expense for all operating leases in fiscal year 2018, none of which was recognized on the balance sheet, was $8,348. As of September 30, 2018, future minimum rental payments required under operating leases, none of which were recognized on the balance sheet, were $26,020.

In May 2014, the FASB issued ASU 2014-09, "Revenue from Contracts with Customers" and has subsequently issued several supplemental and/or clarifying ASUs (collectively "ASC 606"). ASC 606 prescribes a single common revenue standard that replaces most existing U.S. GAAP revenue recognition guidance. ASC 606 outlines a five-step model, under which Woodward will recognize revenue as performance obligations within a customer contract are satisfied. ASC 606 is intended to provide more consistent interpretation and application of the principles outlined in the standard across filers in multiple industries and within the same industries compared to current practices, which should improve comparability. Adoption of ASC 606 is required for annual reporting periods beginning after December 15, 2017 (fiscal year 2019 for Woodward), including interim periods within the reporting period. Woodward has determined it will elect to adopt ASC 606 using the cumulative effect transition method with the cumulative effect of initial adoption recognized at the date of initial application. Further, under the cumulative effect transition method, Woodward will disclose the impact of changes to financial statement line items as a result of applying ASC 606 (rather than previous U.S. GAAP) and include an explanation of the reasons for significant changes in periods subsequent to the adoption.

Woodward has assessed the impact that the future adoption of ASC 606 will have on its Consolidated Financial Statements by analyzing its current portfolio of customer contracts, including a review of historical accounting policies and practices to identify potential differences in applying the guidance of ASC 606. Woodward has also performed a comprehensive review of its current processes and systems to determine and implement changes required to support the adoption of ASC 606 on October 1, 2018, the first day of Woodward's fiscal year 2019. As part of this review process, Woodward is implementing new software solutions to support revenue reporting after adoption.

Based on Woodward's review of its customer contracts, Woodward has determined that revenue on the majority of its customer contracts will continue to be recognized at a point in time, generally upon shipment of products, consistent with Woodward's historical revenue recognition model. Upon adoption of ASC 606, however, Woodward has determined that a significant portion of its revenues from sales of products and services to customers will be recognized over time, rather than at a point in time, due primarily to the terms of certain customer contracts and/or the type of performance obligation being satisfied. As a result of recognizing some revenue over time, various balance sheet line items will be impacted. As such, the adoption of ASC 606 will have an impact on both the timing of revenue recognition and various line items within the Consolidated Balance Sheet.

Woodward has concluded that its warranty arrangements with customers are generally assurance-type warranties, rather than service-type warranties. Accordingly, Woodward will generally continue to account for warranty related promises to its customers as a guarantee for which a warranty liability is recorded when the related good or service is sold, rather than as a distinct performance obligation accounted for separately from the sale of the underlying good or service.

Woodward generally expenses costs as incurred for the engineering and development of new products. Customer funding received for such engineering and development efforts is currently recognized as revenue when earned, with the corresponding costs recognized as cost of sales. ASC 606 requires most customer funding of product engineering and development to be deferred and recognized as revenue as the related products are delivered to the customer. ASC 606 also requires product engineering and development costs to be capitalized as contract fulfillment costs, to the extent recoverable from the deferred customer funding, and subsequently amortized as the related products are delivered to the customer. Therefore, under ASC 606, Woodward expects to record both contract assets and contract liabilities related to such funded engineering and development efforts, which are expected to become material over time. Recognized revenues and research and development costs are both expected to decrease in the year of adoption and for at least several years thereafter, due to the recognition of these contract assets and liabilities. However, recognition of these contract assets and liabilities are expected to have an immaterial impact on pre-tax earnings in future periods.

Woodward is still finalizing the calculation of the impact of these changes to its adoption-date retained earnings and various line items within its Consolidated Balance Sheet as of October 1, 2018.

In addition, ASC 606 will require more comprehensive disclosures about revenue streams and contracts with customers, including significant judgments required. Woodward is currently implementing changes to its processes for preparing required disclosures and to information systems that support the financial reporting process.

Woodward is also evaluating implications to the Company's system of internal controls, relative to revenue recognition and the related revenue disclosures, which are based on the criteria outlined in the Committee of Sponsoring Organizations of the Treadway Commission's 2013 Internal Control – Integrated Framework.

Note 3. Earnings per share

Basic earnings per share is computed by dividing net earnings available to common stockholders by the weighted-average number of shares of common stock outstanding for the period.

Diluted earnings per share reflects the weighted-average number of shares outstanding after consideration of the dilutive effect of stock options and restricted stock.

The following is a reconciliation of net earnings to basic earnings per share and diluted earnings per share:

	Year Ended September 30,		
	2018	2017	2016
Numerator:			
Net earnings	$ 180,378	$ 200,507	$ 180,838
Denominator:			
Basic shares outstanding	61,493	61,366	61,893
Dilutive effect of stock options and restricted stock	2,383	2,146	1,663
Diluted shares outstanding	63,876	63,512	63,556
Income per common share:			
Basic earnings per share	$ 2.93	$ 3.27	$ 2.92

Diluted earnings per share	$ 2.82	$ 3.16	$ 2.85

The following stock option grants were outstanding during the fiscal years ended September 30, 2018, 2017 and 2016, but were excluded from the computation of diluted earnings per share because their inclusion would have been anti-dilutive.

	Year Ended September 30,		
	2018	2017	2016
Options	760	68	-
Weighted-average option price	$ 78.72	$ 63.23	$ n/a

The weighted-average shares of common stock outstanding for basic and diluted earnings per share included the weighted-average treasury stock shares held for deferred compensation obligations of the following:

	Year Ended September 30,		
	2018	2017	2016
Weighted-average treasury stock shares held for deferred compensation obligations	198	180	171

Note 4. Business acquisition

In fiscal year 2018, the Company, and its wholly-owned subsidiary, Woodward Aken GmbH (collectively, the “Purchasers”), entered into a Share Purchase Agreement (the “L’Orange Agreement”) with MTU Friedrichshafen GmbH (“MTU”) and MTU America Inc. (together with MTU, the “Sellers”), both of which were subsidiaries of Rolls-Royce PLC (“Rolls-Royce”). Pursuant to the L’Orange Agreement, the Purchasers agreed to acquire all of the outstanding shares of stock of L’Orange GmbH, together with its wholly-owned subsidiaries in China and Germany, as well as all of the outstanding equity interests of its affiliate, Fluid Mechanics LLC, and their related operations (collectively, “L’Orange”), for total consideration (including cash consideration and the assumption of certain liabilities) of €700,000, or approximately $811,000 based on the foreign currency exchange rate as of the date Woodward executed cross currency swaps in connection with the financing of the transaction as described in Note 7, Derivative instruments and hedging activities. The total consideration to be paid is subject to customary post-closing adjustments. The transactions contemplated by the L’Orange Agreement were completed on June 1, 2018 (the “Closing”) and L’Orange became a subsidiary of the Company. Following the Closing, L’Orange was renamed Woodward L’Orange.

L’Orange is a supplier of fuel injection systems for industrial diesel, heavy fuel oil and dual-fuel engines. L’Orange supplies fuel injection technology for engines that power a wide range of industrial applications including marine power and propulsion systems, special-application off road vehicles, locomotives, oil and gas processing, and power generation. L’Orange serves many large specialist diesel engine manufacturers, including Rolls-Royce Power Systems’ subsidiaries, MTU and Bergen Engines, and other low to high speed engine builders. L’Orange has been integrated into the Company’s Industrial segment.

In connection with the Closing, MTU and a subsidiary of Rolls-Royce, and L’Orange, entered into a long-term supply agreement, dated June 1, 2018 (the “LTSA”). Pursuant to the terms of the LTSA, L’Orange will continue to supply to MTU and its affiliates within Rolls-Royce certain liquid fuel injection systems, injectors, pumps and other associated parts and components for industrial diesel, heavy fuel oil and dual-fuel engines in a manner consistent with the supply of such products prior to the transaction. The LTSA has an initial term that extends through December 31, 2032. During the term of the LTSA, MTU will continue to purchase certain of these products exclusively from L’Orange, subject to certain limitations specified therein, at pricing negotiated at arms-length.

ASC Topic 805, “Business Combinations” (“ASC 805”), provides a framework to account for acquisition transactions under U.S. GAAP. The preliminary purchase price of L’Orange, prepared consistent with the required ASC 805 framework, is allocated as follows:

Cash paid to Sellers	$ 780,401
Less acquired cash and restricted cash	(9,286)
Total purchase price	$ 771,115

The cash consideration was financed through the use of cash on hand, the issuance of an aggregate principal amount of $400,000 of senior unsecured notes in a series of private placement transactions and $167,420 borrowed under Woodward’s existing revolving credit agreement (see Note 13, Credit Facilities, short-term borrowings and long-term debt). In connection with these borrowings, the Company entered into cross currency swap transactions, which effectively lowered the interest rate on each tranche of the senior unsecured notes and the borrowings under the existing revolving credit agreement (see Note 7, Derivative instruments and hedging activities).

The allocation of the purchase price to the assets acquired and liabilities assumed was accounted for under the purchase method of accounting in accordance with ASC 805. Assets acquired and liabilities assumed in the transaction were recorded at their estimated acquisition date fair values, while transaction costs associated with the acquisition were expensed as incurred. Woodward’s preliminary allocation was based on an evaluation of the appropriate fair values and represents management’s best estimate based on available data.

Due to the timing of the transaction, Woodward is in the process of finalizing valuations of current assets, property, plant and equipment (including estimated useful lives), goodwill, intangible assets (including estimated useful lives), and all current and noncurrent liabilities other than the valuation of the pension obligation, the valuation of which is complete. Additionally, Woodward is finalizing the projected combined future tax rate to be applied to the valuation of assets, which could impact the valuation of goodwill and intangible assets. The final determination of the fair value of assets and liabilities will be completed within the one year measurement period as allowed by ASC 805.

The following table, which is preliminary and subject to change, summarizes the estimated fair values of the assets acquired and liabilities assumed at the Closing. Any potential adjustments will be made retroactively and could be material to the preliminary values presented below.

Accounts receivable	$ 26,538
Inventories (1)	72,392
Other current assets	1,385
Property, plant, and equipment	89,772
Goodwill	257,447
Intangible assets	573,427
Total assets acquired	1,020,961
Other current liabilities	41,997
Deferred income tax liabilities	166,927
Other noncurrent liabilities	40,922
Total liabilities assumed	249,846
Net assets acquired	$ 771,115

(1) Inventories include a $16,324 adjustment to state work in progress and finished goods inventories at their fair value as of the acquisition date. The entire inventory fair value adjustment was recognized as a non-cash increase to cost of goods sold ratably over the estimated inventory turnover period during the year ending September 30, 2018.

In connection with the acquisition of L'Orange, Woodward assumed the defined benefit pension obligations of the L'Orange defined benefit pension plans (see Note 18, Retirement benefits). As of June 1, 2018, the total liability recognized by the Company associated with the L'Orange defined benefit pension plans was $39,257, of which $1,143 was considered current.

As summary of the intangible assets acquired, weighted-average useful lives, and amortization methods follows:

	Estimated Amounts	Weighted-Average Useful Life		Amortization Method
Intangible assets with finite lives:				
Customer relationships and contracts	$ 388,705	22	years	Straight-line
Process technology	74,260	22	years	Straight-line
Backlog	42,932	1	year	Accelerated
Other	232	3	years	Straight-line
Intangible asset with indefinite life:				
Trade name	67,298	Indefinite		Not amortized

Total	$ 573,427

For the fiscal year ended September 30, 2018, Woodward recorded amortization expense associated with the acquired intangibles of $19,753. Future amortization expense associated with the acquired intangibles as of September 30, 2018 is expected to be:

Year Ending September 30:	
2019	$ 36,046
2020	19,900
2021	22,920
2022	22,868
2023	22,868
Thereafter	362,089
	$ 486,691

The preliminary purchase price allocation resulted in the recognition of $257,447 of goodwill. Only the portion of goodwill which relates to the U.S. operations of L'Orange is expected to be deductible for tax purposes. The Company has included all of the goodwill in its Industrial segment. The goodwill represents the estimated value of potential expansion with new customers, the opportunity to further develop sales opportunities with new customers, other synergies including supply chain savings expected to be achieved through the integration of L'Orange with Woodward's Industrial segment, and intangible assets that do not qualify for separate recognition, such as value of the assembled L'Orange workforce that is not included within the estimated value of the acquired backlog and customer relationship intangible assets.

Pro forma results for Woodward giving effect to the L'Orange acquisition

The following unaudited pro forma financial information presents the combined results of operations of Woodward and L'Orange as if the acquisition had been completed as of the beginning of the prior fiscal year, or October 1, 2016. The unaudited pro forma financial information is presented for informational purposes and is not indicative of the results of operations that would have been achieved if the acquisition and related borrowings had taken place on October 1, 2016, nor are they indicative of future results.

The unaudited pro forma financial information for the year ended September 30, 2018 includes Woodward's results, including the post-acquisition results of L'Orange, since June 1, 2018, and the pre-acquisition results of L'Orange for that period. The unaudited pro forma financial information for the year ended September 30, 2017 combines Woodward's results with the pre-acquisition results of L'Orange for that period.

Prior to the L'Orange acquisition by Woodward, L'Orange was a wholly owned subsidiary of Rolls-Royce, and as such was not a standalone entity for financial reporting purposes. Accordingly, the historical operating results of L'Orange may not be indicative of the results that might have been achieved, historically or in the future, if L'Orange had been a standalone entity.

The unaudited pro forma results for the years ended September 30, 2018 and September 30, 2017 follow:

	Year Ended September 30, 2018		Year Ended September 30, 2017	
	As reported	Pro forma	As reported	Pro forma
Net sales	$ 2,325,873	$ 2,549,874	$ 2,098,685	$ 2,380,572
Net earnings	180,378	221,193	200,507	173,962
Earnings per share:				
Basic earnings per share	$ 2.93	$ 3.60	$ 3.27	$ 2.83
Diluted earnings per share	2.82	3.46	3.16	2.74

The unaudited pro forma results for all periods presented include adjustments made to account for certain costs and transactions that would have been incurred had the acquisition been completed as of October 1, 2016, including amortization charges for acquired intangible assets, eliminations of intercompany transactions, adjustments for acquisition transaction costs, adjustments for depreciation expense for property, plant, and equipment, and adjustments to interest expense. These adjustments are net of any applicable tax impact and were included to arrive at the pro forma results above.

L'Orange's operating results have been included in the Company's operating results for the periods subsequent to the completion of the acquisition on June 1, 2018. L'Orange contributed net sales of $102,905 for the year ended September 30, 2018 and a net loss before income taxes of $9,334 for the year ended September 30, 2018.

Woodward incurred transaction-related costs of $12,886 for the year ended September 30, 2018, which are included in "Selling, general and administrative expenses" in the Consolidated Statements of Earnings. These transaction-related costs consisted of the L'Orange acquisition transaction and integration costs, warranty and indemnity insurance costs, and German real estate transfer tax costs. Woodward incurred acquisition financing related costs of $4,904 for year ended September 30, 2018, which are included in "Interest expense" in the Consolidated Statements of Earnings. Included in other expense (income), net for the year ended September 30, 2018 was the cost of $5,543 related to an at-the-money-forward option (the "Forward Option") entered into by the Company on April 18, 2018. The Forward Option, which was entered into to manage the Company's exposure to fluctuations in the Euro prior to the anticipated close of the L'Orange Agreement, was not exercised by the Company and expired on June 1, 2018.

Note 5. Joint venture

On January 4, 2016, Woodward and General Electric Company ("GE"), acting through its GE Aviation business unit, consummated the formation of a strategic joint venture between Woodward and GE (the "JV") to develop, manufacture and support fuel systems for specified existing and all future GE commercial aircraft engines that produce thrust in excess of fifty thousand pounds.

As part of the JV formation, Woodward contributed to the JV certain contractual rights and intellectual property applicable to the existing GE commercial aircraft engine programs within the scope of the JV. Woodward had no initial cost basis in the JV because Woodward had no cost basis in the contractual rights and intellectual property contributed to the JV. GE purchased from Woodward a 50% ownership interest in the JV for a $250,000 cash payment to Woodward. In addition, GE will pay contingent consideration to Woodward consisting of fifteen annual payments of $4,894 per year, which began on January 4, 2017, subject to certain claw-back conditions. Woodward received annual payments of $4,894 during the second quarter of each of the fiscal years ended September 30, 2018 and September 30, 2017, which were recorded as deferred income and included in Net cash provided by operating activities under the caption "Other" on the Consolidated Statement of Cash Flows. Neither Woodward nor GE contributed any tangible assets to the JV.

Woodward determined that the JV formation was not the culmination of an earnings event because Woodward has significant performance obligations to support the future operations of the JV. Therefore, Woodward recorded as deferred income the $250,000 consideration received from GE in January of 2016 for its purchase of a 50% equity interest in the JV. The $250,000 deferred income will be recognized as an increase to net sales in proportion to revenue realized on sales of applicable fuel systems within the scope of the JV in a particular period as a percentage of total revenue expected to be realized by Woodward over the estimated remaining lives of the underlying commercial aircraft engine programs assigned to the JV. Unamortized deferred income recorded in connection with the JV formation included accrued liabilities of $7,087 as of September 30, 2018 and $6,451 as of September 30, 2017, and other liabilities of $235,300 as of September 30, 2018 and $236,896 as of September 30, 2017. Amortization of the deferred income recognized as an increase to sales was $5,854 for the twelve months ended September 30, 2018, $6,286 for the twelve months ended September 30, 2017, and $5,261 for the nine-months ended September 30, 2016.

Woodward and GE jointly manage the JV and any significant decisions and/or actions of the JV require the mutual consent of both parties. Neither Woodward nor GE has a controlling financial interest in the JV, but both Woodward and GE do have the ability to significantly influence the operating and financial decisions of the JV. Therefore, Woodward is accounting for its 50% ownership interest in the JV using the equity method of accounting. The JV is a related party to Woodward. Other income includes income of $3,339 for the fiscal year ended September 30, 2018, income of $2,568 for the fiscal year ended September 30, 2017, and income of $6,204 for the nine-months ended September 30, 2016 related to Woodward's equity interest in the earnings of the JV. Woodward received no cash distributions from the JV during the fiscal years ended September 30, 2018 and September 30, 2016, compared to a $2,500 cash distribution from the JV during the fiscal year ended September 30, 2017, which was included in Net cash provided by operating activities under the caption "Other" on the Consolidated Statement of Cash Flows. Woodward's net investment in the JV, which is included in other assets, was $9,611 as of September 30, 2018 and $6,272 as of September 30, 2017.

Woodward's net sales include $72,511 for the fiscal year ended September 30, 2018 of sales to the JV, compared to $70,234 for the fiscal year ended September 30, 2017 and $46,973 for the nine-months ended September 30, 2016. Woodward recorded a reduction to sales of $26,023 for the fiscal year ended September 30, 2018 related to royalties paid to the JV by Woodward on sales by Woodward directly to third party aftermarket customers, compared to $26,133 for the fiscal year ended September 30, 2017 and $21,391 for the nine-months ended September 30, 2016. The Consolidated Balance Sheets include "Accounts receivable" of $10,499 at September 30, 2018, and $8,554 at September 30, 2017, related to amounts the JV owed Woodward, and include "Accounts payable" of $2,944 at September 30, 2018, and $6,741 at September 30, 2017, related to amounts Woodward owed the JV.

Note 6. Financial instruments and fair value measurements

Financial assets and liabilities recorded at fair value in the Consolidated Balance Sheets are categorized based upon a fair value hierarchy established by U.S. GAAP.

The table below presents information about Woodward's financial assets and liabilities that are measured at fair value on a recurring basis and indicates the fair value hierarchy of the valuation techniques Woodward utilized to determine such fair value.

	At September 30, 2018				At September 30, 2017			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial assets:								
Cash	$ 59,838	$ -	$ -	$ 59,838	$ 79,822	$ -	$ -	$ 79,822
Investments in reverse repurchase agreements	4,582	-	-	4,582	1	-	-	1
Investments in term deposits with foreign banks	19,174	-	-	19,174	7,729	-	-	7,729
Equity securities	19,730	-	-	19,730	16,600	-	-	16,600
Total financial assets	$ 103,324	$ -	$ -	$ 103,324	$ 104,152	$ -	$ -	$ 104,152
Financial liabilities:								
Cross currency interest rate swaps	$ -	$ 23,000	$ -	$ 23,000	$ -	$ -	$ -	$ -
Total financial liabilities	$ -	$ 23,000	$ -	$ 23,000	$ -	$ -	$ -	$ -

Investments in reverse repurchase agreements: Woodward sometimes invests excess cash in reverse repurchase agreements. Under the terms of Woodward's reverse repurchase agreements, Woodward purchases an interest in a pool of securities and is granted a security interest in those securities by the counterparty to the reverse repurchase agreement. At an agreed upon date, generally the next business day, the counterparty repurchases Woodward's interest in the pool of securities at a price equal to what Woodward paid to the counterparty plus a rate of return determined daily per the terms of the reverse repurchase agreement. Woodward believes that the investments in these reverse repurchase agreements are with creditworthy financial institutions and that the funds invested are highly liquid. The investments in reverse repurchase agreements are reported at fair value, with realized gains from interest income recognized in earnings, and are included in "Cash and cash equivalents" in the Consolidated Balance Sheets. Since the investments are generally overnight, the carrying value is considered to be equal to the fair value as the amount is deemed to be a cash deposit with no risk of change in value as of the end of each fiscal quarter.

Investments in term deposits with foreign banks: Woodward's foreign subsidiaries sometimes invest excess cash in various highly liquid financial instruments that Woodward believes are with creditworthy financial institutions. Such investments are reported in "Cash and cash equivalents" at fair value, with realized gains from interest income recognized in earnings. The carrying value of Woodward's investments in term deposits with foreign banks are considered equal to the fair value given the highly liquid nature of the investments. As of September 30, 2018, $3,635 of the term deposits with foreign banks are restricted in use as they are pledged collateral for short-term borrowings. The restriction will lapse when the related short-term borrowings are paid.

Equity securities: Woodward holds marketable equity securities, through investments in various mutual funds, related to its deferred compensation program. Based on Woodward's intentions regarding these instruments, marketable equity securities are classified as trading securities. The trading securities are reported at fair value, with realized gains and losses recognized in "Other expense (income), net" on the Consolidated Statements of Earnings. The trading securities are included in "Other assets" in the Consolidated Balance Sheets. The fair values of Woodward's trading securities are based on the quoted market prices for the net asset value of the various mutual funds.

Cross currency interest rate swaps: Woodward holds cross currency interest rate swaps, which are accounted for at fair value. The swaps are included in "Other liabilities" in the Consolidated Balance Sheets. The fair values of Woodward's cross currency interest rate swaps are determined using a market approach that is based on observable inputs other than quoted market prices, including contract terms, interest rates, currency rates, and other market factors.

Accounts receivable, accounts payable, and short-term borrowings are not remeasured to fair value, as the carrying cost of each approximates its respective fair value. The estimated fair values and carrying costs of other financial instruments that are not required to be remeasured at fair value in the Consolidated Balance Sheets were as follows:

	Fair Value Hierarchy Level	At September 30, 2018 Estimated Fair Value	Carrying Cost	At September 30, 2017 Estimated Fair Value	Carrying Cost
Assets:					
Notes receivable from municipalities	2	$ 13,458	$ 13,462	$ 15,848	$ 14,507
Investments in short-term time deposits	2	8,883	8,874	8,227	8,223
Liabilities:					
Long-term debt	2	$ (1,094,987)	$ (1,095,292)	$ (592,317)	$ (582,080)

In connection with certain economic incentives related to Woodward's development of a second campus in the greater-Rockford, Illinois area for its Aerospace segment and Woodward's development of a new campus at its corporate headquarters in Fort Collins, Colorado, Woodward received long-term notes from municipalities within the states of Illinois and Colorado. The fair value of the long-term notes was estimated based on a model that discounted future principal and interest payments received at an interest rate available to the Company at the end of the period for similarly rated municipal notes of similar maturity, which is a level 2 input as defined by the U.S. GAAP fair value hierarchy. The interest rates used to estimate the fair value of the long-term notes were 3.1% at September 30, 2018 and 2.6% at September 30, 2017.

From time to time, certain of Woodward's foreign subsidiaries will invest excess cash in short-term time deposits with a fixed maturity date of longer than three months but less than one year from the date of the deposit. Woodward believes that the investments are with creditworthy financial institutions. The fair value of the investments in short-term time deposits was estimated based on a model that discounted future principal and interest payments to be received at an interest rate available to the foreign subsidiary entering into the investment for similar short-term time deposits of similar maturity. This was determined to be a level 2 input as defined by the U.S. GAAP fair value hierarchy. The interest rates used to estimate the fair value of the short-term time deposits was 6.3% at September 30, 2018 and 5.3% at September 30, 2017.

The fair value of long-term debt was estimated based on a model that discounted future principal and interest payments at interest rates available to the Company at the end of the period for similar debt of the same maturity, which is a level 2 input as defined by the U.S. GAAP fair value hierarchy. The weighted-average interest rates used to estimate the fair value of long-term debt were 3.5% at September 30, 2018 and 2.4% at September 30, 2017.

Note 7. Derivative instruments and hedging activities

Woodward has exposures related to global market risks, including the effect of changes in interest rates, foreign currency exchange rates, changes in certain commodity prices and fluctuations in various producer indices. From time to time, Woodward enters into derivative instruments for risk management purposes only, including derivatives designated as accounting hedges and/or those utilized as economic hedges. Woodward uses interest rate related derivative instruments to manage its exposure to fluctuations of interest rates. Woodward does not enter into or issue derivatives for trading or speculative purposes.

By using derivative and/or hedging instruments to manage its risk exposure, Woodward is subject, from time to time, to credit risk and market risk on those derivative instruments. Credit risk arises from the potential failure of the counterparty to perform under the terms of the derivative and/or hedging instrument. When the fair value of a derivative contract is positive, the counterparty owes Woodward, which creates credit risk for Woodward. Woodward mitigates this credit risk by entering into transactions with only counterparties that are believed to be creditworthy. Market risk arises from the potential adverse effects on the value of derivative and/or hedging instruments that result from a change in interest rates, commodity prices, or foreign currency exchange rates. Woodward minimizes this market risk by establishing and monitoring parameters that limit the types and degree of market risk that may be undertaken.

Derivative instruments not designated or qualifying as hedging instruments

On April 18, 2018, the Company entered into a forward option at a cost of $5,543 whereby, on May 30, 2018, the Company had the ability to exercise its option to purchase €490,000 on June 1, 2018 using U.S. dollars at a fixed exchange rate of 1.2432 (the ("Forward Option"). The Forward Option was entered into to manage the Company's exposure to fluctuations in the Euro prior to the anticipated close of the L'Orange Agreement. The Company did not enter into the Forward Option for trading or speculative purposes. As the spot rate was below 1.2432 on May 30, 2018, the Company elected not to exercise the option and a loss of $5,543 was recognized on the Forward Option in "Other (income) expense, net" in the Consolidated Statements of Earnings in the fiscal year ended September 30, 2018. The Forward Option expired on June 1, 2018.

In May 2018, Woodward entered into cross currency interest rate swap agreements that synthetically convert $167,420 of floating-rate debt under Woodward's existing revolving credit agreement to Euro denominated floating-rate debt in conjunction with the L'Orange acquisition (the "Floating-Rate Cross Currency Swap"). Also in May 2018, Woodward entered into cross currency interest rate swap agreements that synthetically convert an aggregate principal amount of $400,000 of fixed-rate debt associated with the 2018 Note Purchase Agreement (as defined at Note 13, Credit facilities short-term borrowings and long-term debt) to Euro denominated fixed-rate debt (the "Fixed-Rate Cross Currency Swaps"). The cross currency interest rate swaps, which effectively reduce the interest rate on the underlying fixed and floating-rate debt under the 2018 Notes (as defined at Note 13, Credit facilities short-term borrowings and long-term debt) and Woodward's existing revolving credit agreement, respectively, is recorded as a reduction to "Interest expense" in Woodward's Consolidated Statements of Earnings.

Derivatives instruments in fair value hedging relationships

Concurrent with the entry into the Floating-Rate Cross Currency Swap, a corresponding Euro denominated intercompany loan receivable with identical terms and notional amount as the underlying Euro denominated floating-rate debt, with a reciprocal cross currency interest rate swap, was entered into by Woodward Barbados Financing SRL ("Barbados"), a wholly owned subsidiary of Woodward, and is designated as a fair value hedge under the criteria prescribed in ASC Topic 815, Derivatives and Hedging ("ASC 815"). The objective of the derivative instrument is to hedge against the foreign currency exchange risk attributable to the spot remeasurement of the Euro denominated intercompany loan.

Only the change in the fair value related to the cross currency basis spread, or excluded component, of the derivative instrument is recognized in accumulated other comprehensive (losses) earnings ("OCI"). The remaining change in the fair value of the derivative instrument is recognized in foreign currency transaction gain or loss included in "Selling, general and administrative costs" in Woodward's Consolidated Statements of Earnings. The change in the fair value of the derivative instrument in foreign currency transaction gain or loss offsets the change in the spot remeasurement of the intercompany Euro denominated loan. Hedge effectiveness is assessed based on the fair value changes of the derivative instrument, after excluding any fair value changes related to the cross currency basis spread. The initial cost of the cross currency basis spread is recorded in earnings each period through the swap accrual process. There is no credit-risk-related contingent features associated with the floating-rate cross currency interest rate swap.

Derivative instruments in cash flow hedging relationships

In conjunction with the entry into the Fixed-Rate Cross Currency Swaps, five corresponding intercompany loans receivable, with identical terms and amounts of each tranche of the underlying aggregate principal amount of $400,000 of fixed-rate debt, and reciprocal cross currency interest rate swaps were entered into by Barbados, which are designated as cash flow hedges under the criteria prescribed in ASC 815. The objective of these derivative instruments is to hedge the risk of variability in cash flows attributable to the foreign currency exchange risk of cash flows for future principal and interest payments associated with the Euro denominated intercompany loans over a fifteen year period.

Changes in the fair values of the derivative instruments are recognized in accumulated OCI and reclassified to foreign currency transaction gain or loss included in "Selling, general and administrative costs" in Woodward's Consolidated Statements of Earnings. Reclassifications out of accumulated OCI of the change in fair value occur each reporting period based upon changes in the spot rate remeasurement of the Euro denominated intercompany loans, including associated interest. Hedge effectiveness is assessed based on the fair value changes of the derivative instruments and deemed to be highly effective in offsetting exposure to variability in foreign exchange rates. There are no credit-risk-related contingent features associated with these fixed-rate cross currency interest rate swaps.

In June 2013, in connection with Woodward's expected refinancing of current maturities on its then existing long-term debt, Woodward entered into a treasury lock agreement with a notional amount of $25,000 that qualified as a cash flow hedge under ASC 815. The objective of this derivative instrument was to hedge the risk of variability in cash flows attributable to changes in the designated benchmark interest rate over a seven-year period related to the future principal and interest payments on a portion of anticipated future debt issuances. The treasury lock agreement was terminated in August 2013 and the resulting gain of $507 was recorded as a reduction to accumulated OCI, net of tax, and is being recognized as a decrease to interest expense over a seven-year period. Woodward expects to reclassify $72 of net unrecognized gains on terminated derivative instruments from accumulated OCI to earnings during the next twelve months.

In March 2009, Woodward entered into LIBOR lock agreements that qualified as cash flow hedges under authoritative guidance for derivatives and hedging. The objective of this derivative instrument was to hedge the risk of variability in cash flows over a seven-year period related to future interest payments of a portion of anticipated future debt issuances attributable to changes in the designated benchmark interest rate associated with the then expected issuance of long-term debt to acquire HR Textron Inc. ("HRT"). The discontinuance of the LIBOR lock agreements resulted in a loss that was being recognized as an increase of interest expense over a seven-year period on the hedged Series E and F Notes, which were issued on April 3, 2009, using the effective interest method. The unrecognized portion of the loss was recorded in accumulated OCI, net of tax. The unrecognized portion of the loss was fully amortized to interest expense during the second quarter of fiscal year 2016, and as of September 30, 2016 there was no unrecognized loss associated with this cash flow hedge in Woodward's Consolidated Balance Sheet.

Derivatives instruments in net investment hedging relationships

On September 23, 2016, Woodward and Woodward International Holding B.V., a wholly owned subsidiary of Woodward organized under the laws of The Netherlands (the "BV Subsidiary"), each entered into a note purchase agreement (the "2016 Note Purchase Agreement") relating to the sale by Woodward and the BV Subsidiary of an aggregate principal amount of €160,000 of senior unsecured notes in a series of private placement transactions. Woodward issued €40,000 aggregate principal amount of Woodward's Series M Senior Notes due September 23, 2026 (the "Series M Notes"). Woodward designated the Series M Notes as a hedge of a foreign currency exposure of Woodward's net investment in its Euro denominated functional currency subsidiaries. On the Series M Notes, included in foreign currency translation adjustments within total comprehensive (losses) earnings are net foreign exchange gains of $838 for the fiscal year ended September 30, 2018, compared to net foreign exchange losses of $2,395 for the fiscal year ended September 30, 2017 and $47 for the fiscal year ended September 30, 2016.

In July 2016, Woodward designated an intercompany loan of 160,000 RMB between two wholly owned subsidiaries as a hedge of a foreign currency exposure of the net investment of the borrower in the lender. In July 2017, the intercompany loan was repaid, resulting in a realized gain of $380 that was recognized within total comprehensive (losses) earnings, of which a gain of $453 was recognized in fiscal year 2017 and a loss of $73 was recognized in fiscal year 2016.

In June 2015, Woodward designated an intercompany loan of 160,000 Renminbi ("RMB") between two wholly owned subsidiaries as a hedge of a foreign currency exposure of the net investment of the borrower in the lender. In June 2016, the intercompany loan was repaid, resulting in a realized gain of $1,484 that was recognized within total comprehensive (losses) earnings, of which $912 was recognized in fiscal year 2016.

Impact of derivative instruments designated as qualifying hedging instruments

The following table discloses the impact of derivative instruments designated as qualifying hedging instruments on Woodward's Consolidated Statements of Earnings:

		Year ended September 30, 2018		
Derivatives in:	Location	Amount of	Amount of (Gain) Loss	Amount of (Gain) Loss

		(Income) Expense Recognized in Earnings on Derivative	Recognized in Accumulated OCI on Derivative	Reclassified from Accumulated OCI into Earnings
Cross currency interest rate swap agreement designated as fair value hedges	Selling, general and administrative expenses	$ 472	$ 1,034	$ 472
Cross currency interest rate swap agreements designated as cash flow hedges	Selling, general and administrative expenses	1,067	21,966	1,067
Treasury lock agreement designated as cash flow hedge	Interest expense	(72)	-	(72)
		$ 1,467	$ 23,000	$ 1,467

Derivatives in:	Location	Year ended September 30, 2017 Amount of (Income) Expense Recognized in Earnings on Derivative	Amount of (Gain) Loss Recognized in Accumulated OCI on Derivative	Amount of (Gain) Loss Reclassified from Accumulated OCI into Earnings
Treasury lock agreement designated as cash flow hedge	Interest expense	$ (72)	$ -	$ (72)
		$ (72)	$ -	$ (72)

Derivatives in:	Location	Year ended September 30, 2016 Amount of (Income) Expense Recognized in Earnings on Derivative	Amount of (Gain) Loss Recognized in Accumulated OCI on Derivative	Amount of (Gain) Loss Reclassified from Accumulated OCI into Earnings
Treasury lock agreement designated as cash flow hedge	Interest expense	$ 21	$ -	$ 21
		$ 21	$ -	$ 21

The remaining unrecognized gains and losses in Woodward’s Consolidated Balance Sheets associated with derivative instruments that were previously entered into by Woodward, which are classified in accumulated OCI were net losses of $21,315 as of September 30, 2018 and net gains of $218 as of September 30, 2017.

Note 8. Supplemental statement of cash flows information

	Year Ended September 30, 2018	2017	2016
Interest paid, net of amounts capitalized	$ 29,677	$ 27,752	$ 34,500
Income taxes paid	44,831	33,926	99,468

Income tax refunds received	1,976	997	2,350
Non-cash activities:			
Purchases of property, plant and equipment on account	11,982	17,327	10,705
Property, plant and equipment acquired by capital lease	-	-	1,653
Common shares issued from treasury to settle employee liabilities	-	1,767	-
Common shares issued from treasury to settle benefit obligations (Note 19)	14,741	14,014	13,999
Cashless exercise of stock options	-	1,473	753

Note 9. Inventories

	September 30, 2018	September 30, 2017
Raw materials	$ 80,999	$ 59,034
Work in progress	118,010	103,790
Component parts (1)	298,820	262,755
Finished goods	51,767	47,926
	$ 549,596	$ 473,505

(1) Component parts include items that can be sold separately as finished goods or included in the manufacture of other products.

Note 10. Property, plant, and equipment

	September 30, 2018	September 30, 2017
Land and land improvements	$ 94,146	$ 88,326
Buildings and building improvements	565,065	514,453
Leasehold improvements	17,954	16,142
Machinery and production equipment	668,986	543,641
Computer equipment and software	124,788	124,723
Office furniture and equipment	31,533	24,308
Other	19,366	19,393
Construction in progress	103,036	111,910
	1,624,874	1,442,896
Less accumulated depreciation	(564,869)	(520,853)
Property, plant, and equipment, net	$ 1,060,005	$ 922,043

In the second quarter of fiscal year 2018, the Company announced its decision to relocate its Duarte, California operations to the Company's newly renovated Drake Campus in Fort Collins, Colorado. The Company has identified assets held for sale with a carrying value of $8,306 at September 30, 2018, the majority of which are included in "Land and land improvements" and "Buildings and buildings improvements" which relate to the land, building and building improvements, and other assets at the Duarte facility. The assets held for sale are included in the Company's Aerospace segment. The Company had no assets held for sale recorded as of September 30, 2017. The carrying value of the remaining assets at the Duarte facility was approximately $2,600 as of September 30, 2018, of which the Company has identified approximately $650 that is planned to be disposed of as a result of the relocation.

The Company assessed whether the decision to relocate from its Duarte facility could indicate a potential impairment of the assets at the Duarte facility and concluded that the assets were not impaired as of September 30, 2018.

Included in "Office furniture and equipment" and "Other" is $1,650 at September 30, 2018 and $1,653 at September 30, 2017, of gross assets acquired on capital leases, and accumulated depreciation included $1,158 at September 30, 2018 and $739 at September 30, 2017 of amortization associated with the capital lease assets.

In fiscal year 2015, Woodward completed and placed into service a manufacturing and office building on a second campus in the greater-Rockford, Illinois area and has occupied the new facility for its Aerospace segment. This campus is intended to support Woodward's expected growth in its Aerospace segment as a result of Woodward being awarded a substantial number of new system platforms, particularly on narrow-body aircraft.

Included in "Construction in progress" are costs of $32,248 at September 30, 2018 and $49,347 at September 30, 2017 associated with new equipment purchases for the greater-Rockford, Illinois campus and costs of $3,967 at September

30, 2018 and $15,584 at September 30, 2017 associated with the renovation of the Drake Campus.

For the fiscal years ended September 30, 2018, 2017, and 2016, Woodward had depreciation expense as follows:

	Year Ended September 30,		
	2018	2017	2016
Depreciation expense	$ 71,389	$ 55,140	$ 41,550

For the fiscal years ended September 30, 2018, 2017, and 2016, Woodward capitalized interest that would have otherwise been included in interest expense of the following:

	Year Ended September 30,		
	2018	2017	2016
Capitalized interest	$ 2,187	$ 2,008	$ 5,455

Note 11. Goodwill

	September 30, 2017	Additions	Effects of Foreign Currency Translation	September 30, 2018
Aerospace	$ 455,423	$ -	$ -	$ 455,423
Industrial	101,122	257,447	(742)	357,827
Consolidated	$ 556,545	$ 257,447	$ (742)	$ 813,250

	September 30, 2016	Additions	Effects of Foreign Currency Translation	September 30, 2017
Aerospace	$ 455,423	$ -	$ -	$ 455,423
Industrial	100,261	-	861	101,122
Consolidated	$ 555,684	$ -	$ 861	$ 556,545

On June 1, 2018, Woodward completed the acquisition of L'Orange (see Note 4, Business acquisition), which resulted in the recognition of $257,447 in goodwill in the Company's Industrial segment.

Woodward tests goodwill for impairment at the reporting unit level on an annual basis and more often if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. Woodward completed its annual goodwill impairment test as of July 31, 2018 during the quarter ended September 30, 2018. At that date, Woodward determined it was appropriate to aggregate certain components of the same operating segment into a single reporting unit. The fair value of each of Woodward's reporting units was determined using a discounted cash flow method. This method represents a level 3 input and incorporates various estimates and assumptions, the most significant being projected revenue growth rates, earnings margins, future tax rates, and the present value, based on an estimated weighted-average cost of capital (or the discount rate) and terminal growth rate, of forecasted cash flows. Management projects revenue growth rates, earnings margins and cash flows based on each reporting unit's current operational results, expected performance and operational strategies over a ten-year period. These projections are adjusted to reflect current economic conditions and demand for certain products, and require considerable management judgment.

Forecasted cash flows used in the July 31, 2018 impairment test were discounted using weighted-average cost of capital assumptions ranging from 9.83% to 12.76%. The terminal values of the forecasted cash flows were calculated using the Gordon Growth Model and assumed an annual compound growth rate after ten years of 3.32%. These inputs, which are unobservable in the market, represent management's best estimate of what market participants would use in determining the present value of the Company's forecasted cash flows. Changes in these estimates and assumptions can have a significant impact on the fair value of forecasted cash flows. Woodward evaluated the reasonableness of the reporting units' resulting fair values utilizing a market multiple method.

The results of Woodward's goodwill impairment tests performed as of July 31, 2018 did not indicate impairment of any of Woodward's reporting units.

Note 12. Intangible assets, net

	September 30, 2018			September 30, 2017		
	Gross Carrying Value	Accumulated Amortization	Net Carrying Amount	Gross Carrying Value	Accumulated Amortization	Net Carrying Amount
Intangible assets with finite lives:						
Customer relationships and contracts:						
Aerospace	$ 281,683	$ (166,719)	$ 114,964	$ 282,225	$ (151,155)	$ 131,070
Industrial	429,880	(35,856)	394,024	40,962	(34,407)	6,555
Total	$ 711,563	$ (202,575)	$ 508,988	$ 323,187	$ (185,562)	$ 137,625
Intellectual property:						
Aerospace	$ -	$ -	$ -	$ -	$ -	$ -
Industrial	19,448	(18,587)	861	19,422	(18,196)	1,226
Total	$ 19,448	$ (18,587)	$ 861	$ 19,422	$ (18,196)	$ 1,226
Process technology:						
Aerospace	$ 76,372	$ (54,874)	$ 21,498	$ 76,605	$ (49,124)	$ 27,481
Industrial	97,154	(20,373)	76,781	22,950	(17,756)	5,194
Total	$ 173,526	$ (75,247)	$ 98,279	$ 99,555	$ (66,880)	$ 32,675
Backlog:						
Aerospace	$ -	$ -	$ -	$ -	$ -	$ -
Industrial	42,955	(18,006)	24,949	-	-	-
Total	$ 42,955	$ (18,006)	$ 24,949	$ -	$ -	$ -
Other intangibles:						
Aerospace	$ -	$ -	$ -	$ -	$ -	$ -
Industrial	1,629	(1,158)	471	1,312	(956)	356
Total	$ 1,629	$ (1,158)	$ 471	$ 1,312	$ (956)	$ 356
Intangible asset with indefinite life:						
Tradename:						
Aerospace	$ -	$				