



150

MAKING OUR MARK



DEAR SHAREHOLDERS

2020 was a challenging year for Woodward and the world...

- Sales declined 14% to \$2.5 billion and adjusted earnings per share* decreased 19% to \$3.96
- Adjusted free cash flow* improved to \$314 million, an 8% increase

COVID-19 PANDEMIC

We successfully navigated through one of the most challenging times our company has seen over its 150-year history. Our exceptional team acted swiftly in the face of a growing global pandemic. We implemented rigorous health and safety protocols, reduced expenses, enhanced our operational performance and focused on optimization of cash and liquidity. As a result, adjusted free cash flow increased from the prior year, liquidity improved, and we further strengthened our balance sheet. We believe the actions we have taken will position us for longer-term growth and a return to our capital deployment strategy, while continuing to preserve our financial strength through this period of global uncertainty.

OUR MARKETS

The Aerospace market took the brunt of the impact from the pandemic. Global flight hours declined as much as 80 percent on some platforms and OEM build rates plummeted. Flight traffic is starting to show some improvement and OEM production rates are slowly stabilizing. However, we anticipate a slow recovery in commercial aerospace over the next couple years with commercial aftermarket recovering first. When the market does recover, the fleet that will be in service will have greater Woodward content, resulting in a positive fleet dynamic for Woodward, favorably impacting both our earnings and cash flow.

Our Industrial markets were impacted both by the pandemic and the sharp decline in oil and gas prices. The decline in global economic activity is reducing demand for new equipment as well as aftermarket for power generation, transportation and oil and gas products. Looking forward, increasing emissions regulations continue to drive demand for cleaner burning fuels and

improved efficiency which is what our products deliver in natural gas, diesel and alternative fuel applications.

TRUE NORTH OPERATIONAL EXCELLENCE

In challenging economic times, operational excellence becomes even more critical. We made significant progress in 2020 driving improved safety, quality and delivery, with lower working capital, all of which contributed to improved customer satisfaction and higher free cash flow. We will continue to accelerate our True North initiatives to enhance safety, performance, earnings, cash flow and shareholder value.

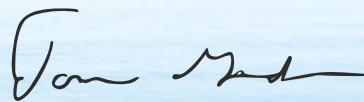
MAKING OUR MARK

We celebrated our 150th anniversary in 2020! Woodward's innovations, service and expertise have helped change the world. As we celebrate this milestone, we are mindful of the connection between our past and our future, and how our innovative spirit, technological leadership and the continuous improvement of our products has built a market-leading reputation and pedigree within our industry. We look forward to continuing our legacy over the next 150 years!

LOOKING TO FY2021

While we anticipate continued pandemic pressure on our business through fiscal 2021, we remain confident in our market position and growth opportunities, as well as the long-term strength of our markets. We will continue to invest in new technology and operational excellence, pillars of our business that have enabled Woodward to successfully navigate numerous past economic cycles. Woodward has faced many challenges over our 150-year history and, as with previous downturns, we believe we can emerge from this crisis an even stronger company, delivering exceptional shareholder value.

I especially want to thank our members for their hard work and dedication during this challenging year and also our board of directors, for their support and commitment to delivering value to our shareholders.

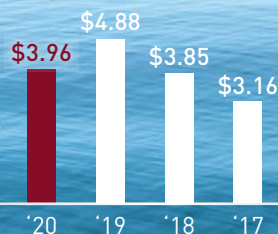


THOMAS A. GENDRON
Chairman, CEO & President

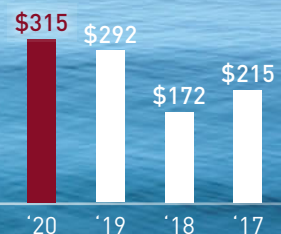
NET SALES
DOLLARS IN BILLIONS



ADJUSTED EARNINGS PER SHARE*
DILUTED



ADJUSTED FREE CASH FLOW*
DOLLARS IN MILLIONS



*Adjusted earnings per share and adjusted free cash flow are defined in our 2020 annual report on Form 10-K.

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, 2020

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

(State or other jurisdiction of incorporation or organization)

36-1984010

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

1081 Woodward Way, Fort Collins, Colorado

(Address of principal executive offices)

80524

(Zip Code)

(970) 482-5811

(Registrant's telephone number, including area code)

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

Title of each class

Trading Symbol(s)

Name of exchange on which registered

Common Stock, par value \$0.001455 per share

WWD

NASDAQ Global Select Market

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 and 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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

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, 2020 as reported on The NASDAQ Global Select Market on that date: \$2,549,208,540. 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, 2020, are excluded in that such persons may be deemed to be affiliates. This determination is not necessarily conclusive of affiliate status.

As of November 18, 2020, 62,792,228 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 virtually on January 27, 2021, are incorporated by reference into Parts II and III of this Form 10-K, to the extent indicated.

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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,” “outlook,” “plan,” “project,” “target,” “strive,” “can,” “could,” “may,” “should,” “will,” “would,” variations of such words, and similar expressions are 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 the now-terminated merger with Hexcel Corporation (“Hexcel”);*
- *the impacts on our business relating to the global COVID-19 pandemic, including the impacts thereof to supply and demand, and measures taken by governments and private industry in response;*
- *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, including: a long-term supply agreement entered into with MTU, a subsidiary of Rolls-Royce, in connection with the acquisition; the opportunity to further develop sales opportunities with new customers and achieve other synergies, including supply chain savings; and the liability recognized by the Company in connection with the various pension plans assumed as part of the acquisition;*
- *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;*
- *our expectations with regard to the return to service of the Boeing 737 MAX aircraft, the related impact on our original equipment manufacturer (“OEM”) and initial provisioning sales, and the aircraft’s return to service;*
- *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.*

All these forward-looking statements are only predictions and are subject to risks, uncertainties, and assumptions that are difficult to predict and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. Factors that could cause actual results and the timing of certain events to differ materially from the forward-looking statements include the factors described in the Risk Factor Summary below as well as the risks detailed in Item 1A, Risk Factors. 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.

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.

Summary of Material Risks

COVID-19 Pandemic Risks

- We are unable to predict the extent to which the pandemic and related impacts will continue to adversely affect our business operations, financial performance, results of operations, financial position and the achievement of our strategic objectives;
- Unforeseen events, such as the COVID-19 pandemic, may occur that significantly reduce commercial aviation, which could adversely affect our business, financial condition and results of operations;
- 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;

Industry Specific Risks

- A significant portion of our revenue is concentrated among a relatively small number of customers;
- 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;
- 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;
- Our participation in a strategic joint venture with GE may make it more difficult to secure long-term sales in certain aerospace markets;
- Industry consolidation trends could reduce our sales opportunities, decrease sales prices, and drive down demand for our products.

General Commercial, Financial, and Regulatory Risks

- Our profitability may suffer if we are unable to manage our expenses in connection with sales increases, sales decreases, or impacts of capital expansion projects, or if we experience change in product mix;
- The U.S. Government may change acquisition priorities and/or reduce spending, which could adversely affect our business, financial condition and results of operations;
- Our business may be adversely affected by government contracting risks;
- 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;
- Subcontractors may fail to perform contractual obligations, or we may have disputes with subcontractors, which could adversely affect our ability to meet our obligations to our customers;
- 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 to respond to business needs or competitive pressures;
- 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;
- Additional tax expense or additional tax exposures could affect our future profitability;
- 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;
- Political and economic uncertainty in the European Union could adversely impact our business, results of operations, financial condition and prospects;
- 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;
- Our financial and operating performance depends on continued access to a stable workforce and on favorable labor relations with our employees;
- 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 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;
- Amounts accrued for contingencies may be inadequate to cover the amount of loss when the matters are ultimately resolved;
- We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-bribery and anti-corruption laws and regulations;
- Pension and postretirement benefit obligation funding and expenses are dependent on several economic assumptions, which if changed 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;
- Our business operations may be adversely affected by information systems interruptions or intrusion;
- Our financial statements are subject to changes in accounting standards that could adversely impact our profitability or financial position;
- Increasing emission standards that drive certain product sales may be eased or delayed, which could reduce our competitive advantage;
- 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;
- 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;
- Changes in government subsidy programs and regulatory requirements may result in decreased demand for our products;
- Our stock price may fluctuate, and the historic market price of our common stock may not be indicative of future market prices;
- 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; and
- Certain anti-takeover provisions of our charter documents and under Delaware law could discourage or prevent others from acquiring our company.

Business Specific Risks

- 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;
- 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;
- We may be unable to successfully execute or effectively integrate acquisitions, and divestitures may not occur as planned;
- 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;
- Our manufacturing activities may result in future environmental costs or liabilities; and
- Failure of our production lines, or those of our subcontractors, to meet required certification standards could disrupt production and have a material adverse effect on our business.

For a more complete discussion of the material risks facing our business, see Item 1A – Risk Factors.

Item 1. Business

General

We are an independent designer, manufacturer, and service provider of control solutions for the aerospace and industrial markets. Our innovative fluid energy, combustion control, electrical energy, and motion control systems help customers offer cleaner, more reliable, and more efficient equipment. Our customers include leading original equipment manufacturers and end users of their products. 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 aerospace systems components optimize performance of fixed wing and rotorcraft platforms in commercial, business and military aircraft, missiles and weapons, ground vehicles and other equipment. Our industrial systems and components enhance the performance of gas and steam turbines, reciprocating engines, compressors, generator sets and other energy-related industrial 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.

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 alternative 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, and 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/A-18 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, and sensors. Our products are used on industrial gas turbines (including heavy frame, aeroderivative and small industrial gas turbines), steam turbines, compressors, and reciprocating engines (including low speed, medium speed and high speed engines, that operate on various fuels, including natural gas, diesel, heavy fuel oil and dual-fuel). The equipment on which our products are found is used to generate power; to extract and distribute fossil 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

Sales to our five largest customers represented approximately 45% of our consolidated net sales for the fiscal year ended September 30, 2020 and approximately 47% of our consolidated net sales for the fiscal year ended September 30, 2019.

Sales to our largest customer in fiscal year ended September 30, 2020, The Boeing Company, accounted for approximately 14% of our consolidated net sales, and 15% in the fiscal year ended September 30, 2019. Accounts receivable from The Boeing Company represented approximately 13% of accounts receivable at September 30, 2020 and 14% at September 30, 2019. Sales to our second largest customer in the fiscal year ended September 30, 2020, General Electric Company, accounted for approximately 11% of our consolidated net sales, and 14% in the fiscal years ended September 30, 2019. Accounts receivable from General Electric Company totaled approximately 9% of accounts receivable at September 30, 2020, and 8% at September 30, 2019. We believe The Boeing Company, General Electric Company, 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, 2020.

	<u>Customer</u>
Aerospace	The Boeing Company, General Electric Company, Raytheon Technologies
Industrial	Rolls-Royce PLC, Weichai Westport, General Electric Company

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 including increased efficiency and thrust, 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, Parker Hannifin, and Raytheon Technologies. 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 Raytheon Technologies.

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 Raytheon Technologies, 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 one of our largest customers, 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 7, *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 and reciprocating engines, applied in power generation systems, transportation, and oil and gas markets. 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 similar 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 Emerson, EControls, Heinzmann GmbH & Co., Hoerbiger, Meggitt, Robert Bosch AG, and Triconix. OEM customers with internal capabilities for similar products include Caterpillar, Cummins, General Electric, Rolls-Royce Power Systems, Wärtsilä, 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 28% of our sales for fiscal year 2020, and 23% for each of the fiscal years 2019 and 2018. 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 2020, 2019 and 2018 were as follows:

	Direct U.S. Government Sales	Indirect U.S. Government Sales	Commercial Sales	Total
Year ended September 30, 2020				
Aerospace	\$ 149,416	\$ 536,424	\$ 905,123	\$ 1,590,963
Industrial	5,867	17,473	881,362	904,702
Total net external sales	<u>\$ 155,283</u>	<u>\$ 553,897</u>	<u>\$ 1,786,485</u>	<u>\$ 2,495,665</u>
Percentage of total net sales	<u>6%</u>	<u>22%</u>	<u>72%</u>	<u>100%</u>
Year ended September 30, 2019				
Aerospace	\$ 118,334	\$ 545,306	\$ 1,216,880	\$ 1,880,520
Industrial	4,491	13,810	1,001,376	1,019,677
Total net external sales	<u>\$ 122,825</u>	<u>\$ 559,116</u>	<u>\$ 2,218,256</u>	<u>\$ 2,900,197</u>
Percentage of total net sales	<u>4%</u>	<u>19%</u>	<u>76%</u>	<u>100%</u>
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	<u>\$ 86,799</u>	<u>\$ 438,044</u>	<u>\$ 1,801,030</u>	<u>\$ 2,325,873</u>
Percentage of total net sales	<u>4%</u>	<u>19%</u>	<u>77%</u>	<u>100%</u>

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

Beginning in fiscal year 2019, for each of our reportable segments, we have elected to quantify backlog in a manner consistent with the definition of remaining performance obligations. Our remaining performance obligations by segment, excluding material rights, as of October 31, 2020 and 2019 is shown in the table below.

	October 31, 2020	% Expected to be satisfied by September 30, 2021	October 31, 2019
Aerospace	\$ 1,160,486	67%	\$ 949,520
Industrial	209,302	97	353,983
	<u>\$ 1,369,788</u>	71%	<u>\$ 1,303,503</u>

Our remaining performance obligations relate to the aggregate amount of the total contract transaction price of firm orders for which the performance obligation has not yet been recognized in revenue.

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.

We are subject to rules promulgated by the Securities and Exchange Commission ("SEC") regarding disclosure related to a company's use of 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 has adopted similar reporting obligations that will be effective in calendar year 2021. Our conflict minerals report for calendar year 2019 was filed with the SEC on May 30, 2020. 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 \$133,134 in fiscal year 2020 and \$159,107 in fiscal year 2019. Research and development costs were 5.3% of consolidated net sales in fiscal year 2020 compared to 5.5% in fiscal year 2019. 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. We support our engine and airframe customers as they develop next generation designs across the commercial aviation, general aviation, civil private and military markets. 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 noted below.

We developed the fuel system, air management system, and actuation hardware for CFM International's LEAP engine program. We also developed actuation system, combustion system and oil system components for Pratt & Whitney's Geared Turbo Fan ("GTF" or "PurePower") engine program. These programs target applications in the single aisle and regional aircraft markets with entry into service in the 2016 to 2022 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 (now renamed SpaceJet) and by Irkut for the MS-21 aircraft. The SpaceJet 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 was certified in 2020 and 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 and the A330neo. We are developing the TRAS for the Boeing 777X, which is projected to enter service in late 2021.

We developed 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, which entered service in 2018.

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 developed flight deck control components for the Bombardier Global 7500 aircraft, as well as many 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, 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 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, prototyping, 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; and
- steam turbine controls and valves that greatly simplify installation and significantly improve reliability

Human Capital

We consider our employees to be the most valuable resource for current and future success and we seek to provide a work environment that fosters growth, encourages self-development, and provides meaningful work. We make significant investments in training and professional development, and provide competitive pay, benefits, and other incentives. Notable programs we offer to our full-time employees include:

- employer sponsored health insurance;
- employer 401(k) matching contributions;
- annual Woodward stock contributions for U.S. employees with two years of employment;
- a tuition assistance program;
- training and professional development courses through our Woodward University curriculum; and
- other values-based and technical development training

In addition to our comprehensive investment in our employees' success, we strive to maintain an inclusive environment that values and leverages the uniqueness of each member to the benefit of all our stakeholders. We view the combination of diverse perspectives and backgrounds as a powerful force for innovation. To promote diversity and our core principles, we emphasize dignity, value, and equality of all employees, regardless of race, color, religion, age, gender or sexual orientation, through our actions and the workplace training programs we provide. We continually strive to harness the diversity of our global workforce by cultivating a climate that permits all our employees to bring their authentic selves to work.

The health and safety of our employees is also a top priority. We have implemented appropriate procedures and precautions to ensure the continued safety and well-being of employees is a dedicated concern, and we not only strive to comply with all federal and local workplace laws and regulations where we do business, but continue to look for ways to exceed compliance standards by utilizing continuous improvement discipline to proactively eliminate risk to our employees.

The global economic effects associated with the COVID-19 pandemic have been unprecedented in their scope and depth. We have been and will continue to be following recommendations of the U.S. Center for Disease Control and other applicable agencies to maximize the safety and well-being of our employees. We have implemented measures to mitigate exposure risks and support operations. With respect to job roles that can be performed remotely, we initiated a global policy to facilitate social distancing and further reduce total occupancy in facilities. We have implanted temperature and symptom screening procedures at each U.S. location, and we have continuously communicated to all our members that if they are not comfortable coming to work, regardless of role, then they do not have to do so. Throughout this crisis, our unwavering focus has been on keeping our workplace as safe as possible, while ensuring we stabilize our business and position ourselves well for the future.

As of October 31, 2020, we employed approximately 7,100 full-time employees of which approximately 2,200 were located outside of the United States, with the majority of such employees located in Germany, Poland and China. Approximately 56% of our full-time employees support our Aerospace segment and 39% support our Industrial segment, while we have 5% of our full-time workforce included in our Corporate support function. We believe that our relationships with our employees are good.

Approximately 15% of our total full-time workforce were union employees as of October 31, 2020, 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 591 employees as of October 31, 2020, expires October 1, 2021. The Local Lodge 727-N International Association of Machinists and Aerospace Workers agreement, which covers 501 employees as of October 31, 2020, expires April 22, 2021. The International Union, United Automobile, Aerospace and Agricultural Implement Workers of America and Local No. 509 agreement, which covered no employees as of October 31, 2020, 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, 2020, 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, 2020, our Consolidated Balance Sheets includes \$606,711 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, 2020.

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. Customers sometimes pay consideration to Woodward for product engineering and development activities that do not result in the immediate transfer of distinct products or services to the customer. For Woodward's accounting policy with regards customer funded product engineering and development activities, see Note 3, *Revenue*, to the Notes to the Consolidated Financial Statements included in "Item 8 – Financial Statements and Supplementary Data."

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 as of October 31, 2020 is provided below. There are no family relationships between any of the executive officers listed below.

Thomas A. Gendron, Age 59. 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; and Director of Global Marketing and Industrial Controls' Business Development February 1999 through March 2000.

Robert F. Weber, Jr., Age 66. Vice Chairman since October 2011; Chief Financial Officer from August 2005 until September 2019 and since April 2020; and Treasurer from August 2005 through November 2018. 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.

Thomas G. Cromwell Age 51. Vice Chairman, Chief Operating Officer since February 2019. Prior to February 2019, Mr. Cromwell was employed at Kohler Co., Inc. for 10 years, most recently serving as Group President, Power from 2014 through February 2019.

Sagar A. Patel, Age 54. President, Aerospace Aftermarket and Hydraulic Systems since December 2019; Business Unit President, Fuel Systems and Controls from April 2019 through November 2019; and President, Aircraft Turbine Systems from June 2011 through April 2019. 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 55. President, Engine Systems since April 2020; Business Unit President, Engine & Turbine Controls from April 2019 through April 2020; President, Industrial Control Systems from November 2016 through April 2019; 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. On November 6, 2020, Mr. Preiss announced his intention to retire from Woodward effective January 8, 2021.

A. Christopher Fawzy, Age 51. 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 as of October 31, 2020 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.

Paul P. Benson, Age 56. Corporate Vice President, Human Resources since September 2019. Prior to September 2019, Mr. Benson was employed at Esterline Technologies Corporation from 2014 through September 2019, where he served as Executive Vice President and Chief Human Resources Officer. Prior to 2014, Mr. Benson was employed at Hewlett Packard Enterprise Company from 2006 through 2014, most recently serving as Senior Human Resources Director, Transformation.

John D. Tysver, Age 58. 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).

Daniel M. Bowman, Age 55. 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.

Matteo R. Pisciotta, Age 48. Corporate Vice President, Global Sourcing since August 2019. Prior to August 2019, Mr. Pisciotta was employed at Polaris Industries, Inc., serving as Vice President, Global Procurement and Supply Chain from 2016 through August 2019. Prior to 2016, Mr. Pisciotta was employed at Oshkosh Corporation for nine years, most recently serving as Vice President, Global Procurement and Supply Chain from 2009 through 2016.

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
- YouTube: YouTube.com/user/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 2020 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

The following summarizes 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:

COVID-19 Pandemic Risks

The global COVID-19 pandemic has led to significant volatility in financial, commodities (including oil and gas) and other markets and industries (including the aviation industry) and has negatively affected the business and results of operations. We are unable to predict the extent to which the pandemic and related impacts will continue to adversely affect our business operations, financial performance, results of operations, financial position and the achievement of our strategic objectives.

In March 2020, the World Health Organization declared COVID-19 to be a global pandemic. The pandemic has led to significant volatility in financial, commodities (including oil and gas) and other markets and industries (including the aviation industry) and has negatively affected the business and results of operations for the Company. We have taken steps to align our business with the unfavorable economic conditions, including the implementation of enhanced measures through our operations management teams and global supply chain to ensure the Company is efficiently utilizing inventory on hand, as well as our internal processing capabilities. In addition, the Company has implemented staff reductions, reductions in employee hours, furloughs, and/or temporary layoffs, at many of its various locations. Given the ongoing and dynamic nature of the circumstances, it is difficult to predict the impact of the COVID-19 pandemic on our business, and there is no guarantee that efforts by the Company to address the adverse impacts of COVID-19 will be effective.

We serve international markets through manufacturing facilities, sales offices and representatives located in the Americas, Asia Pacific, Europe, and India and we rely on third-party suppliers in those areas. Outbreaks of COVID-19, as well as resurgences, in various parts of the United States and the world have resulted in the extended shutdown of certain businesses in these regions, which has resulted in disruptions or delays to our supply chain. These include disruptions from the temporary closure of third-party suppliers, interruptions in product supply and restrictions on the export or shipment of our products. Furthermore, performance delays or interruptions, payment defaults or bankruptcies of our third-party suppliers have adversely affected our business.

The significant disruption or default by our suppliers has adversely impacted our sales and operating results, and we are unable to predict the magnitude of such impacts in the future. In addition, the pandemic has resulted in a widespread health crisis which has adversely affected the global economy, resulting in an economic downturn that has impacted demand for the products and services we provide, which may continue until the COVID-19 pandemic is effectively contained.

We are heavily dependent on net sales to customers in the commercial aerospace industry. Approximately 64% of Woodward's net sales for its fiscal year ended September 30, 2020 were derived from sales to customers in the aerospace industry, with 22% of such sales to Boeing. Actions by U.S. federal, state and foreign governments to address the pandemic, including lockdowns, quarantines, border controls, travel restrictions and business venue closures, as well as changes in the propensity for the general public to travel by air, have had and are expected to continue to have, a significant adverse effect on the commercial aircraft markets and the demand for the products and services we provide. Furthermore, payment deferrals or defaults or bankruptcy of our customers may adversely affect our business, and may lead to additional charges, impairments and other adverse financial impacts.

In addition, the COVID-19 pandemic and resulting market volatility could have significant impacts on our liquidity, which could adversely affect our ability to remain in compliance with our debt covenants, satisfy our debt obligations, declare dividends or other distributions, and conduct share buybacks. Conditions in the financial and credit markets may also limit the availability of funding or increase the cost of funding, which could adversely affect our business, financial position and results of operations.

The ultimate impact of the COVID-19 pandemic on our operations and financial performance will depend on many factors that are not within our control, including, but not limited to: governmental, business and individuals' actions that have been and continue to be taken in response to the pandemic (including restrictions on travel and transport and workforce pressures); the impact of the pandemic and actions taken in response on global and regional economies, travel, and economic activity; the availability of federal, state, local or non-U.S. funding programs; general economic uncertainty in key global markets and financial market volatility; global economic conditions and levels of economic growth; and the pace of recovery when the COVID-19 pandemic subsides.

Unforeseen events, such as the COVID-19 pandemic, may occur that significantly reduce aerospace and industrial end use markets, which could adversely affect our business, financial condition and results of operations.

A significant portion of our business is related to commercial aviation. A global economic downturn and uncertainty in the marketplace, such as we have experienced in fiscal year 2020, has led to a general reduction in demand for air transportation services, leading some airlines to withdraw aircraft from service, which has negatively affected sales of our aerospace products and services. These economic conditions have similarly affected 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 projected 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 economic factors continue to stagnate or worsen, or other adverse economic conditions arise, market demand for our components and systems could be further 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.

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.

As a result of volatility in the credit and capital markets and ongoing 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 continued slowing economic activity currently impacting some of our markets, may cause additional 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 and the global COVID-19 pandemic, 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.

Industry Specific 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.

A significant portion of our revenue is concentrated among a relatively small number of customers. We have fewer customers than many companies with similar sales volumes. For the fiscal year ended September 30, 2020, approximately 45% 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, 2019 represented approximately 47% of our consolidated net sales. Sales to our largest customer in the fiscal year ended September 30, 2020, The Boeing Company ("Boeing"), accounted for approximately 14% of our consolidated net sales, and 15% in the fiscal year ended September 30, 2019. Accounts receivable from Boeing represented

approximately 13% of accounts receivable at September 30, 2020 and 14% at September 30, 2019. Sales to our second largest customer in the fiscal year ended September 30, 2020, General Electric Company (“GE”), accounted for approximately 11% of our consolidated net sales in the fiscal year ended September 30, 2020, and 14% in fiscal year ended September 30, 2019. Accounts receivable from GE represented approximately 9% of accounts receivable at September 30, 2020 and 8% at September 30, 2019. 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.

In October 2018 and March of 2019, two commercial aircraft accidents led to the grounding by the Federal Aviation Administration (“FAA”) and other regulators of the Boeing 737 MAX aircraft, on which we have significant content. The continued grounding of the Boeing 737 MAX by the FAA and other regulators, which started in March of 2019, caused deliveries of that aircraft to be zero in fiscal year 2020. The customer orders and demand for the aircraft began to erode over the course of fiscal year 2020 in response to the COVID-19 pandemic, although long-term prospects have not changed significantly. On November 18, 2020, the FAA approved the Boeing 737 MAX to return to commercial service and we believe the aircraft will resume flying as early as the first quarter of our fiscal year 2021. As the aircraft return to service progresses, we anticipate a large majority of the deliveries missed in fiscal year 2019 and 2020 will be fulfilled in future periods, although at a slower rate than previously estimated. Although we anticipate a slow recovery of the OEM and a slightly better recovery of the initial provisioning sales in the periods following the aircraft’s return to service, further prolonged grounding of the Boeing 737 MAX could substantially decrease our OEM and initial provisioning sales for the 737 MAX and CFM LEAP engines in the near term, which 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.

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, reliability, design and engineering capabilities, innovation, conformity to customers’ specifications, timeliness of delivery, effectiveness of the distribution organization, and quality of customer support after the sale. 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.

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.

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 insourcing 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.

General Commercial, Financial, and Regulatory Risks

Our profitability may suffer if we are unable to manage our expenses in connection with 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 U.S. Government may change acquisition priorities and/or reduce spending, which could adversely affect our business, financial condition and results of operations.

Sales made directly to U.S. Government agencies and entities were 6% of total net sales during fiscal year 2020 and 4% during fiscal year 2019, 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 28% of total sales in fiscal year 2020 and 23% in fiscal year 2019.

- The level of U.S. defense spending is subject to periodic congressional authorization and appropriation actions and is subject to change at any time. The mix of programs to which such funding is allocated is also uncertain, and the level of U.S. defense spending may be impacted by numerous factors out of our control such as the political environment, U.S. foreign policy, and macroeconomic conditions. 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 was 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.
- 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.

Our business may be adversely affected by government contracting risks.

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.

- 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.

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 for 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. In some instances, we depend upon a single source of supply, manufacturing, or logistics support or participate in commodity markets that may be subject to allocations of limited supplies by suppliers. If one or more of our suppliers experiences financial difficulties, delivery delays or other performance problems, we may be unable to meet commitments to our customers or incur additional costs. Our customers rely on us to provide on-time delivery and have certain rights if our delivery standards are not maintained. We believe our supply management and production practices are based on an appropriate balancing of the foreseeable risks and the costs of alternative practices. Nonetheless, 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, or we may have disputes with subcontractors, 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. In addition, we may have disputes with our subcontractors, including disputes regarding the quality and timeliness of work performed by the subcontractor, customer concerns about the subcontractor, our failure to extend existing task orders or issue new task orders under a subcontract, or our hiring of personnel of a subcontractor. Any of these events could have a material adverse effect on our business, reputation, financial condition, results of operations, and cash flows.

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, 2020, our total debt was \$838,483, excluding unamortized debt issuance costs, and including \$650,000 in unsecured notes denominated in U.S. dollars issued in private placements and \$187,847 of unsecured notes denominated in Euros issued in private placements. We had no borrowing on our revolving credit facility as of September 30, 2020. 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 \$100,000 in fiscal year 2021, \$0 in fiscal year 2022, \$0 in fiscal year 2023, \$75,000 in fiscal year 2024, \$85,000 in fiscal year 2025, and the remaining \$577,846 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 36%, in fiscal year 2020, and 34%, in fiscal year 2019, 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 jurisdictions outside of the United States. 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 rules or interpretations of existing tax laws;
- changes in U.S. federal tax legislation and tax rates;
- changes in state or non-U.S. government tax legislation and tax rates, particularly in response to the “The Tax Cuts and Jobs Act” enacted in December 2017 (the “Tax Act”);
- 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;
- changes in management’s intentions regarding the amount of earnings reinvested offshore; and
- the results of audits and examinations of previously filed tax returns and continuing assessments of our tax exposures.

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 fiscal year 2020, approximately 43% 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 10% 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 fiscal year 2020, our operations in China contributed to approximately 8% of our total net sales. 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 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 \$153,270 of cash and cash equivalents held at September 30, 2020, \$127,997 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”). On January 31, 2020, the UK officially left the EU pursuant to Brexit, with a transitional period during which the UK remains bound to the EU’s rules and regulations, which is set to expire on December 31, 2020. Brexit has created an uncertain political and economic environment in the United Kingdom and other European Union countries. Following the transition period, the United Kingdom will lose access to the EU single market and to EU trade deals negotiated with other jurisdictions, so the long-term effects of Brexit will depend on the agreements or arrangements with the EU for the United Kingdom to retain access to EU markets either during the transitional period or more permanently. 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 2020, approximately 3% of our consolidated net sales were invoiced to customers in the UK through both our Aerospace and Industrial reportable segments. Approximately 23% 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, 2020, we had \$808,252 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. 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 2020, we completed our fiscal year 2020 annual goodwill impairment test. We use the income approach based on a discounted cash flow method that incorporates various estimates and assumptions. The results of our fiscal year 2020 annual goodwill impairment test performed as of July 31, 2020 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 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 15% 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. Due to the specialized nature of our business, our future performance is highly dependent upon our ability to maintain a workforce with the requisite skills in multiple areas including engineering, manufacturing, information technology, cybersecurity, business development and strategy, and management. Additionally, as we expand our operations internationally, it is increasingly important to hire and retain personnel with relevant experience in local laws, regulations, customs, traditions and business practices. 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. We cannot be certain that our pending patent applications will result in the issuance of patents to us, that patents issued to or licensed by us in the past or in the future will not be challenged or circumvented by competitors, or that these patents will be found to be valid or sufficiently broad to preclude our competitors from introducing technologies similar to those covered by our patents and patent applications. 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 and anti-corruption laws and regulations.

The U.S. Foreign Corrupt Practices Act (“FCPA”) and similar anti-bribery and anti-corruption laws and regulations in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to government officials for the purpose of obtaining or retaining business or securing an improper business advantage. The FCPA applies to companies, individual directors, officers, employees and agents. Companies also may be held liable for actions taken by strategic or local partners or representatives. The FCPA also imposes accounting standards and requirements on U.S. corporations and their foreign affiliates, which are intended to prevent the diversion of corporate funds to the payment of bribes and other improper payments. 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.

Pension and postretirement benefit obligation funding and expenses are dependent on several economic assumptions, which if changed 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, 2020, we had \$266,709 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 and third parties to administer, store and support multiple business activities. Furthermore, we may have access to sensitive, confidential or otherwise protected information that may be subject to privacy and security laws and controls. 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.

Cyber-based risks, in particular, are evolving and include, but are not limited to, both attacks on our information technology (“IT”) infrastructure and attacks on the IT infrastructure of third parties (both on premises and in the cloud) attempting to gain unauthorized access to our confidential or other proprietary information, classified information, or information relating to our employees, customers and other third parties. The threats we face vary from attacks common to most industries to more advanced and persistent, highly organized adversaries, including nation states, which target us and other defense contractors because we protect national security information. If we are unable to protect sensitive information, including complying with evolving data privacy regulations, our customers or governmental authorities could question the adequacy of our threat mitigation and detection processes and procedures, and depending on the severity of the incident, our customers’ data, our employees’ data, our intellectual property, and other third party data (such as subcontractors, suppliers and vendors) could be compromised. As a consequence of their persistence, sophistication and volume, we may not be successful in defending against all such attacks. Due to the evolving nature of these security threats and the national security aspects of much of the data we protect, the impact of any future incident cannot be predicted. 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. We adopted the new accounting standard related to revenue recognition on October 1, 2018 and adopted the new accounting standard related to lease accounting on October 1, 2019. 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.

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.

Prices for fossil fuels 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.

Our stock price may fluctuate and 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 closing price of our common stock on the NASDAQ Global Select Market ranged from a high of \$127.84 per share to a low of \$50.24 per share during the twelve months ended September 30, 2020. 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;
- market volatility caused by macroeconomic factors, such as a global pandemic;
- 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, 2020, we had 72,960 shares of common stock issued, of which 10,277 shares were held as treasury shares. In addition, stockholders who each own 5% or greater of our shares hold a total of approximately 26% of the outstanding shares of our common stock. During the fourth quarter of fiscal year 2020, the average daily trading volume of our stock was approximately 342 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.

Business Specific Risks

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. Additionally, our competitors may develop new technology, or more efficient ways to produce their existing products that could cause our existing products or services to become 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.

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.

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

As part of our business strategy, we may pursue acquisitions of other companies and assets. For example, in fiscal year 2018, we acquired Woodward L'Orange. 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 also may make strategic divestitures from time to time, such as the divestiture of our renewable power systems business and related businesses. These transactions may result in continued financial involvement in the divested businesses, such as through guarantees or other financial arrangements, following the transaction. Nonperformance by those divested businesses could affect our future financial results through additional payment obligations, higher costs or asset write-downs, any of which 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 2020, we announced a restructuring plan and incurred workforce management costs primarily in connection with our responsive actions to mitigate the effects of the COVID-19 pandemic. 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.

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 and compliance with any future changes in these laws and regulations could result in the

incurrence of additional 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.

Failure of our production lines, or those of our subcontractors, to meet required certification standards could disrupt production and have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our existing production lines, as well as the production lines of our subcontractors, are sometimes required to pass varying levels of qualification with certain of our customers. Some of our customers require that our production lines pass their specific qualification standards and that we, and any subcontractors that we may use, be registered under or certified to certain U.S. or international quality standards. We may be unable to obtain, maintain, or we may experience delays in obtaining, a certification or registration to a required quality standard. A delay in obtaining, or the failure to obtain a necessary quality certification or registration could result in significant out-of-sequence work and increased production costs, as well as delayed deliveries to customers, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Item 1B. Unresolved Staff Comments

None.

Item 2 Properties

Our principal plants are as follows:

United States

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 (leased) –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

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, Saudi Arabia, the United Kingdom, Germany, and the United States.

In the fourth quarter of fiscal year 2020, the Company announced its decision to relocate its Loveland, Colorado operations to its existing facilities in Fort Collins, Colorado and to acquire a new facility in Windsor, 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

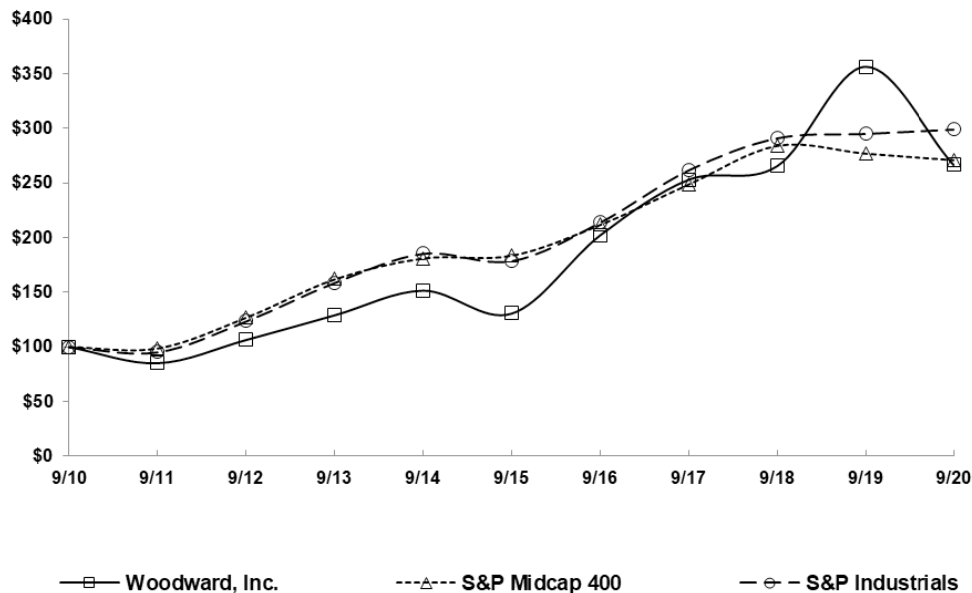
Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock is listed on The NASDAQ Global Select Market and is traded under the symbol “WWD.” At November 19, 2020, 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, 2010 in our common stock and in each of the two indexes and tracks relative performance through September 30, 2020. 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.

COMPARISON OF 10 YEAR CUMULATIVE TOTAL RETURN*
Among Woodward, Inc., the S&P Midcap 400 Index
and the S&P Industrials Index



*\$100 invested on 9/30/10 in stock or index, including reinvestment of dividends.
Fiscal year ending September 30.

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	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19	9/20
Woodward, Inc.	\$100.00	\$85.21	\$106.49	\$129.05	\$151.61	\$130.58	\$202.14	\$252.91	\$265.40	\$356.22	\$266.47
S&P Midcap 400	100.00	98.72	126.90	162.02	181.17	183.70	211.85	248.96	284.33	277.25	271.26
S&P Industrials	100.00	95.40	123.64	158.88	185.54	178.77	214.06	261.91	291.19	295.23	299.14

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, 2020 through July 31, 2020 (2)	73	\$ 74.94	—	486,654
August 1, 2020 through August 31, 2020 (2)	233	85.69	—	486,654
September 1, 2020 through September 30, 2020 (2)	45	80.16	—	486,654

- (1) In November 2019, our board of directors approved a stock repurchase 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 2022.
- (2) Under a trust established for the purposes of administering the Woodward Executive Benefit Plan, 73 shares of common stock were acquired in July 2020, 42 shares of common stock were acquired in August 2020, and 45 shares of common stock were acquired in September 2020 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, 191 shares of common stock were acquired in August 2020 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,				
	2020	2019	2018	2017	2016
	(In thousands except per share amounts)				
Net sales (1)(2)	\$ 2,495,665	\$ 2,900,197	\$ 2,325,873	\$ 2,098,685	\$ 2,023,078
Net earnings (1)(2)(3)(4)(5)(6)(7)(11)(12)(13)	240,395	259,602	180,378	200,507	180,838
Earnings per share:					
Basic earnings per share	3.86	4.19	2.93	3.27	2.92
Diluted earnings per share	3.74	4.02	2.82	3.16	2.85
Cash dividends per share	0.605	0.630	0.553	0.485	0.430
Income taxes (7)	41,486	61,010	39,200	52,240	45,648
Interest expense (8)	35,811	44,001	40,465	35,639	26,776
Interest income	1,764	1,413	1,674	1,725	2,025
Depreciation expense	91,700	85,982	71,389	55,140	41,550
Amortization expense	39,458	56,022	44,742	25,777	27,486
Capital expenditures	47,277	99,066	127,140	92,336	175,692
Weighted-average shares outstanding:					
Basic shares outstanding	62,267	61,950	61,493	61,366	61,893
Diluted shares outstanding	64,209	64,498	63,876	63,512	63,556

At September 30,

	2020	2019	2018	2017	2016
	(Dollars in thousands)				
Working capital	\$ 818,533	\$ 563,792	\$ 523,619	\$ 593,955	\$ 463,811
Total assets	3,903,336	3,956,526	3,790,649	2,757,109	2,642,362
Long-term debt, less current portion (9)	736,849	864,899	1,092,397	580,286	577,153
Total debt (9)	838,483	1,084,899	1,246,032	612,886	727,153
Total liabilities (10)	1,910,659	2,229,785	2,252,545	1,385,726	1,429,767
Stockholders' equity	1,992,677	1,726,741	1,538,104	1,371,383	1,212,595
Full-time worker members	7,248	9,023	8,277	6,829	6,852

Notes:

1. *Woodward adopted Accounting Standards Update ("ASU") 2014-09, Revenue from Contracts with Customers, and all subsequently issued supplemental and/or clarifying ASUs related to ASU 2014-09 (collectively "ASC 606") on October 1, 2018 and elected the modified retrospective transition method. The results for periods prior to fiscal year 2019 were not adjusted for the new standard and the cumulative effect of the change in accounting of \$38,745 was recognized as a net increase to retained earnings at the date of adoption.*
2. *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" and subsequent to acquisition, "Woodward L'Orange"). As Woodward L'Orange was acquired during the third quarter of fiscal year 2018, net sales from Woodward L'Orange for fiscal year 2019 included sales of \$332,009, compared to net sales of \$102,905 from Woodward L'Orange during the period June 1, 2018 through September 30, 2018.*
3. *In fiscal year 2020 and fiscal year 2018, Woodward recorded restructuring charges, net of tax, totaling \$16,621 and \$12,674, respectively. Restructuring charges recognized in fiscal year 2020 primarily related to workforce management actions related to the COVID-19 pandemic, while restructuring charges recognized in fiscal year 2018 related 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 fiscal year 2018 consist of workforce management costs related to aligning the Company's industrial turbomachinery business with current market conditions.*
4. *In fiscal year 2019, Woodward recorded total charges, net of tax, of \$44,286 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 ("Duarte move related costs"), (ii) the purchase accounting impacts related to the amortization of the Woodward L'Orange backlog intangible, and (iii) charges associated with the impairment of accounts receivable, inventory and certain other assets in connection with the insolvency of Senvion, a significant customer of the Company's renewables business.*
5. *In fiscal year 2018, Woodward recorded total charges, net of tax, of \$42,018 related to (i) Duarte move related costs (ii) the purchase accounting impacts recognized in cost of goods sold related to the revaluation of the Woodward L'Orange inventory and the amortization of the backlog intangible, (iii) the transaction and integration costs associated with the acquisition of Woodward L'Orange, (iv) cost associated with an at-the-money-forward option, (v) warranty and indemnity insurance costs associated with the acquisition of Woodward L'Orange, and (vi) German real estate transfer tax costs associated with the acquisition of Woodward L'Orange.*
6. *In 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.*
7. *In fiscal year 2019, Woodward recognized a tax expense of \$10,588, or \$0.17 per basic and diluted share, related to final regulations issued by the Internal Revenue Service that modified the one-time repatriation tax on deferred foreign income computation required by the change in U.S. tax regulation in December 2017. 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.*

8. *Interest expense for fiscal years 2018 and 2017 includes an increase of \$8,695 and \$8,209, respectively, due to the impact of retrospectively applying Accounting Standards Update ("ASU") 2017-07, "Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost." The interest cost component of net periodic benefit costs included in interest expense for fiscal year 2019 was \$9,444.*
9. *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.*
10. *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 \$238,306 as of September 30, 2020, \$238,905 as of September 30, 2019, \$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.*
11. *Associated with our decision to relocate our Duarte, California operations to the newly renovated Drake Campus in Fort Collins, Colorado, we closed on the sale of our Duarte real property and recorded a pre-tax gain on sale of assets in the amount of \$22,323 during fiscal year 2020.*
12. *In fiscal year 2020, Woodward approved a plan to divest the renewable power systems business and other related businesses, which resulted in the recognition of the associated assets and liabilities as held for sale. Concurrently, Woodward determined that the assets held for sale, net of any liabilities held for sale, were impaired and recognized a non-cash impairment charge of \$37,902, representing the write down of the associated net assets held for sale to their fair market value as of December 31, 2019.*
13. *In fiscal year 2020, as a result of the COVID-19 pandemic and future cash flow uncertainties, we elected to terminate and settle our existing cross-currency interest rate swap derivative instruments. Concurrent with settlement of the derivative instruments, we discontinued the related foreign currency hedging relationships associated with the instruments. As a result of the termination of the instruments, and related hedging relationships, we recognized a pre-tax gain of \$30,481 and incurred a swap breakage fee of \$3,000.*

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 control solutions for the aerospace and industrial markets. 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.

COVID-19 Pandemic

In March 2020, the World Health Organization (“WHO”) declared the COVID-19 outbreak a pandemic. In an effort to contain COVID-19 or slow its spread, governments and private industry around the world have also enacted various measures, including orders to close all businesses not deemed “essential,” isolate residents to their homes or places of residence, and practice social distancing when engaging in essential activities. In an effort to protect the health and safety of its employees, we have implemented enhanced cleaning protocols and adopted social distancing policies at all of our locations, including working from home, reducing the number of people working in locations at any one time, and suspending employee travel. We have taken steps to align our business with the unfavorable economic conditions, including the implementation of enhanced measures through our global supply chain and business unit management teams to ensure we are efficiently utilizing inventory on hand, as well as our internal processing capabilities. In addition, we have taken specific actions to reduce costs and implemented staff reductions, reduction in employee hours and/or salaries, furloughs, temporary layoffs, or a combination of these actions, at many of our locations.

The global health crisis caused by COVID-19 and the related responses of governments and private industry have negatively impacted business activity across the globe. Since the end of the second quarter of fiscal year 2020, we have experienced declining demand and both our aerospace and industrial markets have been significantly impacted economically, which resulted in a rapid decline in orders from and shipments to customers. Outbreaks in various regions also resulted in the extended shutdown of certain businesses in these regions, which has resulted in disruptions or delays to our supply chain. Although we have experienced certain impacts from the global emergence of the COVID-19 pandemic, the full extent it will have on our business is currently unknown. When COVID-19 is demonstrably contained, we anticipate an improvement in economic activity; however, the timing and degree of such improvement will depend on the rate and pace of reopening, and the effectiveness of the containment efforts deployed by various national, state, and local governments.

We have generally been deemed an essential business and therefore have continued to operate during the pandemic. We will continue to actively monitor the situation and may take further actions altering our business operations that we determine are in the best interests of our employees, customers, communities, business partners, suppliers, and shareholders, or as required by federal, state, or local authorities. It is not clear what the potential effects any such alterations or modifications may have on our business, including the effects on the Company's customers, employees, and prospects, or on our financial results in future periods.

Divestiture of the Renewables business and related businesses

In the first quarter of fiscal year 2020, Woodward's board of directors approved a plan to divest our renewable power systems business, protective relay business, and other businesses within the Industrial segment (collectively, the "disposal group"). The assets of the disposal group were primarily located in Germany, Poland and Bulgaria and accounted for approximately \$88,000 of sales in fiscal year 2019. The transactions consummating the sale of the disposal group were completed on April 30, 2020 (the "Disposal Group Closing").

Financial information for the disposal group is reflected in our financial statements prior to the date of Disposal Group Closing.

Termination of Merger with Hexcel Corporation

On January 12, 2020, Woodward entered into an Agreement and Plan of Merger (the "Merger Agreement") with Hexcel Corporation ("Hexcel") and Genesis Merger Sub, Inc., a wholly owned subsidiary of Woodward ("Merger Sub"). The Merger Agreement provided that, upon the terms and subject to the conditions set forth therein, Merger Sub would merge with and into Hexcel, with Hexcel surviving the merger as a wholly owned subsidiary of Woodward. On April 5, 2020, in response to the economic uncertainties in both the aerospace and industrial sectors resulting from the global health crisis caused by the COVID-19 pandemic, Woodward and Hexcel entered into an agreement to terminate the Merger Agreement, with no liability to either party (the "Termination Agreement"). Neither party was required to pay the other a termination fee as a result of the mutual decision to terminate the Merger Agreement. Merger transaction-related costs have been expensed as incurred during fiscal year 2020.

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, the global COVID-19 pandemic and associated mitigation efforts had a significant impact on global air traffic in fiscal year 2020, reducing total global passenger air miles flown by nearly two-thirds from the prior year. Commercial aircraft production was initially paused and then reduced in response to the significant decrease in demand from airlines and aircraft manufacturers. Reductions ranging from thirty to fifty percent were seen in most aircraft models at all aircraft OEMs. As a result of the decline in demand, regional governments offered various financial support and stimulus to airlines and aircraft manufacturers, which in some cases, increased the targets 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. While the near-term production levels are significantly reduced and order backlogs have been reduced by cancellations and deferrals, we expect production levels to remain stable due to solid order backlogs for the new aircraft models.

The business and general aviation market demand was also impacted in fiscal year 2020 as business jet deliveries were down as a result of the COVID-19 pandemic and increased availability of used aircraft, which was partially offset by the ramp of some newer models. Turboprop and helicopter deliveries weakened again in fiscal year 2020. We expect business jet, turboprop and helicopter deliveries to improve when economic stability returns and aircraft flight operations recover.

We have content on the Airbus A320neo, A330neo, and A380, Bell 429, Boeing 737 MAX, 777, 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.

The extended grounding of the Boeing 737 MAX by the FAA and other regulators, which started in March of 2019, caused deliveries of that aircraft to be zero in fiscal year 2020. The customer orders and demand for the aircraft began to erode over the course of fiscal year 2020 in response to the COVID-19 pandemic, though long-term prospects have not changed significantly. On November 18, 2020, the FAA approved the Boeing 737 MAX to return to commercial service and we believe the aircraft will resume flying as early as the first quarter of our fiscal year 2021. As the aircraft return to service progresses, we anticipate a large majority of the deliveries missed in fiscal year 2019 and 2020 will be fulfilled in future periods, although at a slower rate than previously estimated. In fiscal year 2020, the grounding had a significant negative impact on OEM sales in addition to the continuing significant unfavorable impact on initial provisioning sales related to the 737 MAX aircraft and CFM LEAP engine. We anticipate a slow recovery of the OEM and a slightly better recovery of the initial provisioning sales in the periods following the aircraft's return to service.

Defense – The defense industry has been strengthening with increasing budgetary allocations since 2016. The National Defense Authorization Act for Fiscal Year 2019, which was signed into law in August 2018, resulted in slightly higher levels of funding for both procurement and research and development, and we believe budget increases in recent years will support modest growth in fiscal year 2021. 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, KC-46A Tanker, and T-7A Trainer) 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) and some legacy programs, such as the F-15, will maintain or potentially increase production. We have significant motion control system content for the refueling boom on the KC-46A, which entered 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. Although we expect overall production rates to remain flat or decrease for these weapons programs in fiscal year 2021, relative to the very strong production rates in recent years, we expect overall demand to remain favorable in the near term.

Aftermarket – The substantial reduction in global air passenger traffic due to the COVID-19 pandemic, with corresponding reduction in required airliner capacity, significantly impacted our commercial aftermarket business in fiscal year 2020, as airlines parked nearly two-thirds of the active fleet. Airliner capacity is anticipated to remain below 2019 levels, even as it is improving, until approximately 2023 or later, with single aisle aircraft and domestic flights expected to return to normal volumes sooner than twin aisle and international flights. As airline revenues and profitability continue to be impacted, operators will elect to defer maintenance where possible, which will continue to pressure our aftermarket sales while capacity recovers. We anticipate newer aerospace platforms, which contain more of our products, will be preferred as aircrafts return to service, which will provide increased content across existing platforms. With the entry into service of the new single aisle aircraft (Boeing 737 MAX and Airbus A320neo), notwithstanding the grounding of the Boeing 737 MAX as described above, we have seen a significant increase in initial provisioning sales to the operators of these new aircraft. The Boeing 787 has been a successful twin aisle aircraft as well, which would also result in stronger initial provision sales. Among legacy aircraft, the A320 family and 737NG will continue to be in demand in current operating fleets, which will support demand for repairs and spare parts for older engine programs remaining in service.

Our defense aftermarket has also increased as the combat readiness of existing military programs on which we have content is prioritized by the U.S. Government. 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. Although we expect variability, which is generally attributable to the cycling of various maintenance and upgrade programs, as well as actual usage, our outlook for defense aftermarket is strong, as the service lives of existing military programs are extended and there is increased demand for repairs and spare parts for older military aircraft programs remaining in service.

Industrial Markets

Our industrial products are used worldwide in various types of turbine- and reciprocating engine-powered equipment, including 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, stabilized in fiscal year 2020 with some industrial gas turbine sales growth compared to fiscal year 2019, driven primarily by increased Woodward content on certain newer industrial gas turbines. Start reliability, fuel flexibility, safety, 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 continues to be 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 project a short-term decline in demand due to the COVID-19 pandemic on the global economy. This short-term decline is anticipated to be followed by a recovery and modest growth as demand for electricity is met through a balance of renewable power sources and newer industrial gas turbines for which Woodward has been awarded increased content.

Reciprocating Engines – Woodward’s key markets for engine control technologies are power generation, transportation (including compressed natural gas (“CNG”) trucks in Asia, mining, and marine shipping), and oil and gas. We continue to expect the market demand for natural gas trucks to remain favorable as the Chinese government continues to implement more stringent emissions standards and encourage natural gas usage under its initiative on air quality improvement. The demand for large reciprocating engines used in marine, oil and gas, and prime power generation applications was impacted by the COVID-19 pandemic and the drop in oil prices in the second half of fiscal year 2020. The demand for internet traffic and data storage is also driving demand for data center power generation. We anticipate some softening and stabilization of the large reciprocating engine market in fiscal year 2021 due to a more stable market environment. 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. We expect share gains by our customers and increased scope on the latest generation reciprocating engines as 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.

RESULTS OF OPERATIONS

Operational Highlights

Net sales for fiscal year 2020 were \$2,495,665, a decrease of \$404,532, or 13.9%, from \$2,900,197 for the prior fiscal year. Foreign currency exchange rates had an unfavorable impact on net sales of \$9,380 for fiscal year 2020, as compared to the same period of the prior year. Net sales excluding the disposal group for fiscal year 2020 were \$2,428,002, a decrease of 13.7% from \$2,812,200 for the prior fiscal year. Aerospace segment net sales for the fiscal year 2020 were down 15.4% to \$1,590,963, compared to \$1,880,520 for the prior fiscal year. Industrial segment net sales for fiscal year 2020 were down 11.3% to \$904,702, compared to \$1,019,677 for the prior fiscal year. Industrial segment net sales excluding the disposal group for fiscal year 2020 were down 10.2% to \$837,040, compared to \$931,681 for the prior fiscal year.

Net earnings for the fiscal year 2020 were \$240,395, or \$3.74 per diluted share, compared to \$259,602, or \$4.02 per diluted share, for the prior fiscal year. Net earnings excluding the disposal group for fiscal year 2020 were not materially different from reported net earnings for the same period. Adjusted net earnings for the fiscal year 2020 were \$254,037, or adjusted earnings per share of \$3.96 per diluted share, compared to \$314,476, or \$4.88 per diluted share, for the prior fiscal year.

The effective tax rate in fiscal year 2020 was 14.7%, compared to 19.0% for the prior fiscal year. The adjusted effective tax rate in fiscal year 2020 was 17.8%, compared to 17.5% for the prior fiscal year. The effective tax rate for fiscal year 2019 reflects the transition impacts of the changes in the U.S. federal tax law enacted in December 2017 with additional income tax expense of \$10,588 related to the transition impacts recognized in the fiscal year 2019.

Earnings before interest and taxes (“EBIT”) for the fiscal year 2020 were \$315,928, a decrease of 13.0% from \$363,200 in the prior fiscal year. Earnings before interest, taxes, depreciation and amortization (“EBITDA”) for the fiscal year 2020 were \$447,086, down 11.5% from \$505,204 for the prior fiscal year. Adjusted EBIT and adjusted EBITDA for fiscal year 2020 were \$343,158 and \$474,316, respectively, compared to \$423,990 and \$544,894, respectively, for the prior fiscal year.

Aerospace segment earnings as a percent of segment net sales were 19.5% in fiscal year 2020, compared to 20.7% in the prior fiscal year. Industrial segment earnings as a percent of segment net sales were 11.1% in the fiscal year 2020, compared to 9.2% in the prior fiscal year. There were no adjustments to Industrial segment earnings as a percent of segment net sales for fiscal year 2020, which were down compared to adjusted Industrial segment earnings as a percent of segment net sales of 11.2% for fiscal year 2019.

Net sales excluding the disposal group, adjusted net earnings, adjusted earnings per share, EBIT, adjusted EBIT, EBITDA, adjusted EBITDA, adjusted Industrial segment earnings, and adjusted Industrial segment earnings excluding the disposal group 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 measures 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 2020 was \$349,491, compared to \$390,608 for fiscal year 2019. The decrease in net cash provided by operating activities in fiscal year 2020 compared to fiscal year 2019 is primarily attributable to the impact of certain cash payments for accounts payable and taxes due, partially offset by timing of cash received from customers as well as proceeds from settlement of cross-currency interest rate swaps.

For fiscal year 2020, free cash flow, which we define as net cash flows from operating activities less payments for property, plant and equipment, was \$302,404, compared to \$291,542 for the fiscal year 2019. Adjusted free cash flow, which we define as free cash flow, plus the proceeds from the sale of real property at our former Duarte, California operations and excluding cash paid for merger and divestiture transaction costs, cash paid for restructuring charges, and cash proceeds received from settlement of our cross-currency interest rate swaps, was \$315,220 for fiscal year 2020. (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.)

At September 30, 2020, we held \$153,270 in cash and cash equivalents, including restricted cash of \$3,497, and had total outstanding debt of \$838,483 with additional borrowing availability of \$988,229, net of outstanding letters of credit, under our revolving credit agreement. At September 30, 2020, we also had additional borrowing capacity of \$7,567 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,			
	2020		2019	
		% of Net Sales		% of Net Sales
Net sales	\$ 2,495,665	100%	\$ 2,900,197	100%
Costs and expenses:				
Cost of goods sold	1,855,422	74.3	2,192,654	75.6
Selling, general, and administrative expenses	217,710	8.7	211,205	7.3
Research and development costs	133,134	5.3	159,107	5.5
Impairment of assets sold	37,902	1.5	–	0.0
Restructuring charges	22,216	0.9	–	0.0
Gain on cross-currency interest rate swaps, net	(30,481)	(1.2)	–	0.0
Interest expense	35,811	1.4	44,001	1.5
Interest income	(1,764)	(0.1)	(1,413)	(0.0)
Other expense (income), net	(56,166)	(2.3)	(25,969)	(0.9)
Total costs and expenses	2,213,784	88.7	2,579,585	88.9
Earnings before income taxes	281,881	11.3	320,612	11.1
Income tax expense	41,486	1.7	61,010	2.1
Net earnings	\$ 240,395	9.6	\$ 259,602	9.0

Other select financial data:

	September 30, 2020	September 30, 2019
Working capital	\$ 818,533	\$ 563,792
Short-term borrowings	—	220,000
Total debt	838,483	1,084,899
Total stockholders' equity	1,992,677	1,726,741

2020 RESULTS OF OPERATIONS

2020 Net Sales Compared to 2019

Consolidated net sales for fiscal year 2020 decreased by \$404,532, or 13.9%, compared to fiscal year 2019.

Details of the changes in consolidated net sales are as follows:

Consolidated net sales for the year ended September 30, 2019	\$	2,900,197
Aerospace volume		(290,218)
Industrial volume		(68,776)
Disposal group divestiture impact		(36,307)
Noncash consideration		(18,318)
Effects of changes in price and sales mix		18,467
Effects of changes in foreign currency rates		(9,380)
Consolidated net sales for the year ended September 30, 2020	\$	<u>2,495,665</u>

The decrease in consolidated net sales for fiscal year 2020 is primarily attributable to the decline in sales volume related to the ongoing impact of the COVID-19 pandemic and extended grounding of the Boeing 737 MAX aircraft. In the Aerospace segment, the decrease in net sales volumes is primarily attributable to lower commercial sales as a result of a secular decline in global passenger traffic and OEM production rates, plant closures and furloughs, all as a result of the global COVID-19 pandemic. In the Industrial segment, the decrease in net sales volumes is primarily attributable to continued weakness in the oil and gas market and the associated aftermarket, compounded by the ongoing impact of the COVID-19 pandemic.

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 foreign currency gains or losses on sales transactions.

2020 Costs and Expenses Compared to 2019

Cost of goods sold decreased by \$337,232 to \$1,855,422, or 74.3% of net sales, for fiscal year 2020, from \$2,192,654, or 75.6% of net sales, for fiscal year 2019. The decrease in cost of goods sold in fiscal year 2020, as compared to the same period of the prior year, is primarily attributable to lower sales volume as a result of global disruption from the COVID-19 pandemic, the elimination of annual bonus for fiscal year 2020, as well as Duarte move-related costs and purchase accounting impacts related to the amortization of the backlog intangible acquired in connection with the acquisition of Woodward L’Orange, which were recognized in fiscal year 2019, whereas there were no such costs recognized in fiscal year 2020.

Gross margin (as measured by net sales less cost of goods sold, divided by net sales) was 25.7% for fiscal year 2020, compared to 24.4% for fiscal year 2019. The increase in gross margin for fiscal year 2020 is primarily attributable to the elimination of annual bonus for fiscal year 2020, as well as Duarte move-related costs and purchase accounting impacts related to the amortization of the backlog intangible acquired in connection with the acquisition of Woodward L’Orange which were recognized in fiscal year 2019, whereas there were no such costs recognized in fiscal year 2020.

Selling, general and administrative expenses increased by \$6,505, or 3.1%, to \$217,710 for fiscal year 2020, compared to \$211,205 for fiscal year 2019. Selling, general, and administrative expenses as a percentage of net sales increased to 8.7% for fiscal year 2020, compared to 7.3% for fiscal year 2019. The increase in selling, general and administrative expenses, both in dollars and as a percentage of sales, for fiscal year 2020 compared to the same period of the prior year is primarily due to an increase in certain expenses related to merger and divestiture activities, and fees incurred on termination of the cross-currency interest rate swaps. The increase was partially offset by savings from cost reduction initiatives including the elimination of annual bonus for fiscal year 2020.

Research and development costs decreased by \$25,973, or 16.3%, to \$133,134 for fiscal year 2020, as compared to \$159,107 for fiscal year 2019. Research and development costs as a percentage of net sales decreased to 5.3% for fiscal year 2020, as compared to 5.5% for fiscal year 2019.

The decrease in research and development costs is primarily due to savings from cost reduction initiatives including the elimination of annual bonus for fiscal year 2020. Our research and development activities also 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.

Impairment of assets sold was composed entirely of a charge of \$37,902 recognized in the first quarter of fiscal year 2020. Woodward's board of directors approved a plan to divest the disposal group, which resulted in the recognition of the associated assets and liabilities as held for sale. Concurrently, Woodward determined that the assets held for sale, net of any liabilities held for sale, were impaired and recognized a non-cash impairment charge of \$37,902, representing the write down of the associated net assets held for sale to their fair market value as of December 31, 2019. Refer to Note 11, *Sale of businesses* in the Notes to the Consolidated Financial Statements in "Item 8 – Financial Statements and Supplementary Data" for further details.

Restructuring charges of \$22,216 recognized in fiscal year 2020 primarily related to workforce management as a result of volume and demand declines due to the global COVID-19 pandemic. All of the restructuring charges recorded in fiscal year 2020 were recorded as nonsegment expenses and there were no such restructuring charges recorded in fiscal year 2019.

Gain on cross-currency interest rate swaps, net was composed entirely of a charge of \$30,481 as a result of settlement and termination of cross-currency interest rate swaps designated in foreign currency hedging relationships. In the third quarter of fiscal year 2020, as a result of the COVID-19 pandemic and future cash flow uncertainties, we elected to terminate and settle our existing cross-currency interest rate swap derivative instruments. Refer to Note 9, *Derivative instruments and hedging activities*, in the Notes to the Consolidated Financial Statements in "Item 8 – Financial Statements and Supplementary Data" for further details.

Interest expense decreased by \$8,190, or 18.6%, to \$35,811, for fiscal year 2020, compared to \$44,001 for fiscal year 2019. Interest expense decreased as a percentage of net sales to 1.4% for fiscal year 2020, as compared to 1.5% for fiscal year 2019. Since fiscal year 2019, we have paid the entire balance of two series of private placement notes totaling \$143,000 primarily using free cash flow and proceeds from our revolving credit facility. The revolving credit facility bears interest at a substantially lower rate than the private placement notes that were paid. We have also repaid the entire balance of our revolving credit facility as of September 30, 2020.

Other income, net was \$56,166 for fiscal year 2020, compared to \$25,969 for fiscal year 2019. The increase in other income in fiscal year 2020 compared to fiscal year 2019 was primarily due to a gain on the sale of a portion of our property in Duarte, California in the amount of \$22,323 and a gain on the sale of our property in Loveland, Colorado in the amount of \$2,330.

Income taxes were provided at an effective rate on earnings before income taxes of 14.7% for fiscal year 2020, compared to 19.0% for fiscal year 2019.

The decrease in the effective tax rate for fiscal year 2020 compared to fiscal year 2019 is primarily attributable to the additional income tax expense resulting from Transition Tax (as defined below) regulations issued by the IRS on June 14, 2019 which did not repeat in the current fiscal year and increased foreign earnings taxed at a lower rate resulting from the net gain on the cross-currency interest rate swap termination. This decrease was partially offset by a smaller favorable net excess income tax benefits from stock-based compensation.

The total amount of the gross liability for worldwide unrecognized tax benefits reported in other liabilities in the Consolidated Balance Sheets was \$9,851 at September 30, 2020 and \$10,305 at September 30, 2019. At September 30, 2020, the amount of the liability for unrecognized tax benefits that would impact our effective tax rate, if recognized, was \$4,730. At this time, Woodward estimates that it is reasonably possible that the liability for unrecognized tax benefits will decrease by as much as \$84 in the next twelve months due to the completion of review by tax authorities, lapses of statutes, and the settlement of tax positions. We accrue for potential interest and penalties related to unrecognized tax benefits in tax expense. Woodward had accrued interest and penalties of \$489 as of September 30, 2020 and \$437 as of September 30, 2019.

Our 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. Our fiscal years remaining open to examination for U.S. Federal income taxes include fiscal years 2018 and thereafter. In fiscal year 2020, we concluded our U.S. Federal income tax examination through fiscal year 2017, which included a foreign tax carryback to fiscal year 2016. Our fiscal years remaining open to examination for significant U.S. state income tax jurisdictions include fiscal years 2016 and thereafter. We closed various audits in foreign jurisdictions in the second and third quarters of fiscal year 2020. Consequently, fiscal years remaining open to examination in significant foreign jurisdictions include 2016 and thereafter.

Segment Results

The following table presents sales by segment:

	Year Ended September 30,			
	2020		2019	
Net sales:				
Aerospace	\$ 1,590,963	63.7%	\$ 1,880,520	64.8%
Industrial	904,702	36.3%	1,019,677	35.2%
Consolidated net sales	<u>\$ 2,495,665</u>	<u>100%</u>	<u>\$ 2,900,197</u>	<u>100%</u>

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

	Year Ended September 30,			
	2020		2019	
Aerospace	\$	310,137	\$	389,126
Industrial		100,321		93,521
Nonsegment expenses		(94,530)		(119,447)
Interest expense, net		(34,047)		(42,588)
Consolidated earnings before income taxes		281,881		320,612
Income tax expense		41,486		61,010
Consolidated net earnings	<u>\$</u>	<u>240,395</u>	<u>\$</u>	<u>259,602</u>

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

	Year Ended September 30,			
	2020		2019	
Aerospace		19.5%		20.7%
Industrial		11.1%		9.2%

2020 Segment Results Compared to 2019

Aerospace

Aerospace segment net sales decreased by \$289,557, or 15.4% to \$1,590,963 for fiscal year 2020, compared to \$1,880,520 for fiscal year 2019. The decrease in segment net sales for fiscal year 2020 as compared to fiscal year 2019 was primarily driven by lower commercial sales due to the secular decline in global passenger traffic and OEM production rates, plant closures and furloughs, all as a result of the global COVID-19 pandemic, and the extended grounding of the Boeing 737 MAX aircraft, partially offset by higher defense aftermarket sales due to higher demand associated with upgrade and fleet readiness defense programs.

Defense OEM sales decreased in fiscal year 2020 compared to fiscal year 2019, driven primarily by lower sales for guided weapons and fixed wing aircraft due to supply chain challenges as a result of disruption caused by the global COVID-19 pandemic. Our defense aftermarket has increased as the U.S. Government has prioritized the combat readiness of existing military programs on which we have content. Global conflicts and growing international demand for various other military programs continue to drive demand for defense aircraft, including fighter jets, transports, and both utility and attack rotorcraft, supported by our products and systems. Although we expect some ongoing variability in defense aftermarket sales due to the global COVID-19 pandemic and timing of continued maintenance needs and upgrade programs, we expect U.S. government funding for defense platforms on which we have content to be strong under the current defense budget.

Aerospace segment earnings decreased by \$78,989, or 20.3%, to \$310,137 for fiscal year 2020, compared to \$389,126 for fiscal year 2019.

The net decrease in Aerospace segment earnings fiscal year 2020 was due to the following:

Earnings for the period ended September 30, 2019	\$	389,126
Sales volume		(142,992)
Price, sales mix and productivity		22,398
Manufacturing expansion costs in the first half of fiscal year 2020		(7,129)
Savings from cost reduction initiatives		53,398
Other, net		(4,664)
Earnings for the period ended September 30, 2020	<u>\$</u>	<u>310,137</u>

Aerospace segment earnings as a percentage of segment net sales were 19.5% for fiscal year 2020 and 20.7% fiscal year 2019. Aerospace segment earnings in fiscal year 2020 decreased primarily due to impact on sales of the global spread of the COVID-19 pandemic and extended grounding of the Boeing 737 MAX aircraft, partially offset by savings from cost reduction initiatives, including the elimination of annual bonus for fiscal year 2020, and favorable product mix.

Industrial

Industrial segment net sales decreased by \$114,975, or 11.3%, to \$904,702 for fiscal year 2020, compared to \$1,019,677 for fiscal year 2019. Industrial segment net sales excluding the disposal group decreased by \$94,641, or 10.2%, to \$837,039 for fiscal year 2020, compared to \$931,680 for the same period of fiscal year 2019. Foreign currency exchange rates had an unfavorable impact on segment net sales of \$9,249 for fiscal year 2020.

The decrease in Industrial segment net sales in fiscal year 2020 was primarily attributable to lower sales volumes, the ongoing impacts of the global COVID-19 pandemic across markets we serve, continued weakness in the oil and gas market, and the divestiture of the disposal group.

The demand for diesel fuel systems was negatively impacted by a softening of the oil and gas market amid a slowing global economy, pricing volatility and decreased capital investments related to reduced drilling activity, particularly within the North American fracking market.

Sales of fuel systems for CNG trucks in Asia were slightly up in fiscal year 2020 as production rates for China 6 compliant trucks recovered from the large pre-buy of China 5 compliant trucks, which negatively impacted sales in previous years. Sales were also impacted in fiscal year 2020 from temporary plant closures associated with the COVID-19 pandemic. We anticipate the market demand for natural gas trucks to continue as the Chinese government continues to enforce China 6 regulations and continues to incentivize the use of natural gas rather than diesel.

Although the industrial gas turbine market began to stabilize during fiscal year 2020 as global power demand increases and domestic upgrade initiatives transition from planning to execution, we expect to see volatility in demand due to the COVID-19 pandemic. Industrial gas turbine sales in fiscal year 2020 benefitted from the depletion of inventory in the market and increased Woodward content on certain newer industrial gas turbines. However, this was partially offset by the weakening demand in new turbine programs due to the economic uncertainty caused by the COVID-19 pandemic and we expect lower demand in industrial gas turbine sales until the outbreak is contained and demand stabilizes.

Industrial segment earnings increased by \$6,800, or 7.3%, to \$100,321 for fiscal year 2020, compared to \$93,521 for fiscal year 2019. Industrial segment earnings excluding the disposal group decreased by \$590, or 0.6%, to \$96,719, compared to \$97,309 for fiscal year 2019. There were no adjustments to Industrial segment earnings for fiscal year 2020 and adjusted Industrial segment earnings for fiscal year 2019, which exclude certain purchase accounting impacts related to the L'Orange Acquisition, were \$114,621. Adjusted Industrial segment earnings for fiscal year 2019 excluding the disposal group were \$118,409.

The net increase in Industrial segment earnings for fiscal year 2020 was due to the following:

Earnings for the period ended September 30, 2019	\$	93,521
Sales volume		(34,881)
Price, sales mix and productivity		(1,723)
L'Orange backlog amortization		13,608
Effects of changes in foreign currency rates		(2,827)
Disposal group divestiture impact		590
Savings from cost reduction initiatives		29,980
Other, net		2,053
Earnings for the period ended September 30, 2020	<u>\$</u>	<u>100,321</u>

Industrial segment earnings as a percentage of segment net sales were 11.1% for fiscal year 2020, compared to 9.2% for fiscal year 2019. Industrial segment earnings as a percentage of segment net sales, excluding the disposal group, were 11.6% for fiscal year 2020, compared to 10.4% for fiscal year 2019. The increase in Industrial segment earnings for fiscal year 2020 was primarily due to savings from cost reduction initiatives, including the elimination of annual bonus for fiscal year 2020, and the amortization of the backlog intangible acquired in connection with the L'Orange acquisition that was recognized in fiscal year 2019, whereas no amortization of this backlog intangible was recognized in fiscal year 2020. The increase in fiscal year 2020 were partially offset by lower sales volume. There were no adjustments to Industrial segment earnings as a percentage of segment net sales for fiscal year 2020, which were down compared to adjusted Industrial segment earnings as a percentage of segment net sales of 11.2% for fiscal year 2019.

Nonsegment

Nonsegment expenses decreased to \$94,530 for fiscal year 2020, compared to \$119,447 for fiscal year 2019. Included in nonsegment expenses for fiscal year 2020 were the impairment charge on assets held for sale associated with the divestiture of the disposal group in the amount of \$37,902, restructuring charges of \$22,216, and merger and divestiture transaction costs of \$16,355, partially offset by the net gain on settlement of our cross-currency interest rate swaps of \$27,481, and a gain on the sale of a portion of our property in Duarte, California in the amount of \$22,323. Included in nonsegment expenses for fiscal year 2019 were Duarte move-related costs in the amount of \$27,089. Excluding all of these charges from both 2020 and 2019, nonsegment expenses decreased in fiscal year 2020 compared to fiscal year 2019 primarily due to savings from cost reduction initiatives, which includes the elimination of annual bonus for fiscal year 2020.

For a discussion of the *2019 Results of Operations*, including a discussion of the financial results for the fiscal year ended September 30, 2019 compared to the fiscal year ended September 30, 2018, refer to Part I, Item 7 of our Form 10-K filed with the SEC on November 25, 2019.

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 \$153,270 at September 30, 2020 and \$99,073 at September 30, 2019, and our working capital was \$818,533 at September 30, 2020 and \$563,792 at September 30, 2019. Of the cash and cash equivalents held at September 30, 2020, \$127,997 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.

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 that began 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 \$56,640 at September 30, 2020 and \$42,171 at September 30, 2019 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.

On June 19, 2019, we amended our revolving credit agreement to, among other things, extend the termination date of the revolving loan commitments of the lenders thereunder from April 28, 2020 to June 19, 2024. Our revolving credit facility, as amended, provides a borrowing capacity of up to \$1,000,000 with the option to increase total available borrowings to up to \$1,500,000, 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 facility expansions.

On October 1, 2018, we paid the entire principal balance of \$100,000 on our 6.39% Series D Notes and on April 3, 2019, we paid the entire principal balance of \$43,000 on our 8.24% unsecured Series F notes using in both instances proceeds from borrowings under our revolving credit facility.

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 16, *Credit facilities, short-term borrowings and long-term debt* in the Notes to the Consolidated Financial Statements in Part II, Item 8 of this Form 10-K.

At September 30, 2020, we had total outstanding debt of \$838,483 consisting of various series of unsecured notes due between 2020 and 2033, and amounts borrowed under our revolving credit facility, and our finance leases. Our Series G and Series J notes, both of which have an aggregate principal amount of \$50,000, mature on November 15, 2020. At September 30, 2020, we had additional borrowing availability of \$988,229 under our revolving credit facility, net of outstanding letters of credit, and additional borrowing availability of \$7,567 under various foreign credit facilities.

At September 30, 2020, we had no borrowings outstanding under our revolving credit facility. Revolving credit facility and short-term borrowing activity during the fiscal year ended September 30, 2020 were as follows:

Maximum daily balance during the period	\$	343,255
Average daily balance during the period	\$	219,960
Weighted average interest rate on average daily balance		2.28%

We believe we were in compliance with all our debt covenants as of September 30, 2020. Additionally, we believe the current known impacts of the COVID-19 pandemic will not affect our ability to remain in compliance with our debt covenants. See Note 16, *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 a share purchase agreement to acquire L’Orange (the “L’Orange Agreement”). 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 “L’Orange Acquisition”). The cash consideration was financed through the use of cash on hand, the issuance of senior unsecured notes and \$167,420 borrowed under our revolving credit facility. In connection with these borrowings, we entered into cross currency swap transactions, which effectively lowered the interest rate on each tranche of the senior unsecured notes, and the borrowings under our revolving credit agreement (see Note 9, *Derivative instruments and hedging activities* in the Notes to the Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for more information).

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. We believe the current known impacts of the COVID-19 pandemic will not impact our ability to satisfy our long-term debt obligations.

In the first quarter of fiscal year 2017, our board of directors terminated our 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 ended in November 2019 (the “2017 Authorization”). In fiscal year 2019, we repurchased 1,102 shares of our common stock for \$110,311 under the 2017 Authorization pursuant to a 10b5-1 plan. Effective upon the expiration of the 2017 Authorization in November 2019, our board of directors approved a new program for the repurchase of up to \$500,000 of our outstanding shares of common stock on the open market or in privately negotiated transactions over a three-year period that will end in 2022 (the “2019 Authorization”). In fiscal year 2020, we repurchased 124 shares of our common stock for \$13,346 under the 2019 Authorization. We purchased 456 shares of our common stock for \$43,253 in the first nine-months of fiscal year 2019 under the 2017 Authorization. Under the now-terminated merger agreement with Hexcel, we had been generally prohibited from repurchasing our common stock during the pendency of the Merger. With the termination of the merger agreement on April 5, 2020, share repurchases were no longer restricted. However, to preserve cash flow due to the economic uncertainties caused by the COVID-19 pandemic, we did not make any additional share repurchases for the remainder of fiscal year 2020.

Associated with our decision to relocate our Duarte, California operations to the newly renovated Drake Campus in Fort Collins, Colorado, which was finalized in fiscal year 2019, on December 30, 2019, we closed on the sale of one of two parcels of the Duarte real property and recorded a pre-tax gain on sale of assets in the amount of \$13,522. On August 11, 2020, we closed on the remaining parcel of the Duarte real property and recorded an additional pre-tax gain on sale of assets in the amount of \$8,801.

In the third quarter of fiscal year 2020, as a result of the COVID-19 pandemic and future cash flow uncertainties, we elected to terminate and settle our existing cross-currency interest rate swap derivative instruments. Concurrently with settlement of the derivative instruments, we discontinued the related foreign currency hedging relationships associated with the instruments. Upon termination of the instruments, and related hedging relationships, we recognized a pre-tax gain of \$30,481 and incurred a swap breakage fee of \$3,000. We received net cash proceeds of \$59,571 at the date of settlement, which included \$58,191 of proceeds related to the fair value of the instruments and \$4,380 of net accrued interest, less a \$3,000 fee to terminate the cross-currency interest rate swap agreements.

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 and do not currently foresee adverse impacts to financial institutions providing our capital requirements as a result of the COVID-19 pandemic.

Cash Flows

	Year Ended September 30,	
	2020	2019
Net cash provided by operating activities	\$ 349,491	\$ 390,608
Net cash (used in) investing activities	(6,880)	(102,527)
Net cash (used in) provided by financing activities	(290,242)	(265,599)
Effect of exchange rate changes on cash and cash equivalents	1,828	(7,003)
Net change in cash and cash equivalents	54,197	15,479
Cash and cash equivalents, including restricted cash, at beginning of year	99,073	83,594
Cash and cash equivalents, including restricted cash, at end of period	<u>\$ 153,270</u>	<u>\$ 99,073</u>

2020 Cash Flows Compared to 2019

Net cash flows provided by operating activities for fiscal year 2020 was \$349,491, compared to \$390,608 for fiscal year 2019. The decrease in net cash provided by operating activities in fiscal year 2020 compared to fiscal year 2019 is primarily attributable to the timing of certain cash payments for accounts payable and taxes due, partially offset by timing of cash received from customers as well as proceeds from settlement of cross-currency interest rate swaps during the third quarter of fiscal year 2020.

Net cash flows used in investing activities for fiscal year 2020 was \$6,880, compared to \$102,527 in fiscal year 2019. The decrease in cash used in investing activities in fiscal year 2020 compared to fiscal year 2019 is primarily due to a decrease in payments for property plant and equipment, proceeds in the amount of \$30,089 from the sale of a parcel of our Duarte real property, and proceeds in the amount of \$10,443 from divestiture of the disposal group.

Net cash flows used in financing activities for fiscal year 2020 was \$290,242, compared to net cash flows used in financing activities of \$265,599 in fiscal year 2019. During fiscal year 2020, we had net debt payments in the amount of \$264,201, compared to net debt payments in the amount of \$150,028 in fiscal year 2019. Also, in fiscal year 2020, we repurchased 124 shares of our common stock for \$13,346, compared to the repurchase of 1,102 shares of our common stock for \$110,311 in fiscal year 2019. The common stock repurchases in fiscal year 2020 were made under the 2019 Authorization and the common stock repurchases in fiscal year 2019 were made under the 2017 Authorization pursuant to a Company 10b5-1 plan.

For a discussion of the 2019 Cash Flows Compared to 2018, refer to Part I, Item 7 of our Form 10-K filed with the SEC on November 25, 2019.

Off-Balance Sheet Arrangements

As of September 30, 2020, 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, 2020 is as follows:

	Year Ending September 30,					
	2021	2022	2023	2024	2025	Thereafter
	(in thousands)					
Long-term debt principal	\$ 100,000	\$ —	\$ —	\$ 75,000	\$ 85,000	\$ 577,846
Interest on debt obligations (1)	25,147	23,294	23,147	21,967	20,541	66,835
Operating leases	5,667	4,458	3,392	2,826	2,579	6,313
Finance leases	1,687	739	325	136	—	—
Purchase obligations (2)	343,480	49,457	6,389	27,308	1,859	1,811
Other (3)	—	—	—	—	—	9,851
Total	<u>\$ 475,981</u>	<u>\$ 77,948</u>	<u>\$ 33,253</u>	<u>\$ 127,237</u>	<u>\$ 109,979</u>	<u>\$ 662,656</u>

- (1) Interest obligations on floating rate debt instruments are calculated for future periods using interest rates in effect as of September 30, 2020. See Note 16, *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 \$9,851 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, 2020, there were no outstanding borrowings on our revolving credit facility. Our revolving credit facility matures in June 2024.
- Contributions to our retirement pension benefit plans, which we estimate will total approximately \$1,929 in fiscal year 2021. As of September 30, 2020, our pension plans were net underfunded by \$40,914 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 total \$3,113 in fiscal year 2020. 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, 2020, our other postretirement benefit plans were underfunded by \$25,445 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.

Guarantees and letters of credit totaling approximately \$12,027 were outstanding as of September 30, 2020, 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 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.

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* and Note 5, *Leases*, in the Notes to the Consolidated Financial Statements included in “Item 8 – Financial Statements and Supplementary Data. 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.

Non-U.S. GAAP Financial Measures

Adjusted net earnings, adjusted earnings per share, adjusted Industrial segment earnings, adjusted Industrial segment earnings excluding the renewable power systems business, Industrial segment net sales excluding net sales attributable to the renewable power systems business, 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.

Industrial segment net sales excluding the disposal group

The Company presents certain sales measures excluding the disposal group net sales, which it refers to as “excluding the disposal group” to show the changes to Woodward’s historical business without the businesses included in the disposal group divestitures, which occurred in April 2020. The Company calculates Industrial segment net sales excluding net sales attributable to the disposal group by removing the net sales of its disposal group businesses from the net sales of its Industrial segment. The Company believes that the exclusion of the disposal group net sales illustrates more clearly how the underlying business of its Industrial segment is performing, as these sales are no longer related to the ongoing operations of the Industrial segment business. The Company’s calculation of Industrial segment net earnings and adjusted Industrial segment net earnings excluding the disposal group is discussed below.

The reconciliation of Industrial segment net sales to Industrial segment net sales excluding the disposal group for the year ended September 30, 2020 and September 30, 2019 is shown in the table below:

	Year Ended September 30,	
	2020	2019
Industrial segment net sales (U.S. GAAP)	\$ 904,702	\$ 1,019,677
Disposal group net sales	(67,663)	(87,997)
Industrial segment net sales excluding the disposal group (Non-U.S. GAAP)	<u>\$ 837,039</u>	<u>\$ 931,680</u>

Earnings based non-U.S. GAAP financial measures

Adjusted net earnings is defined by the Company as net earnings excluding, as applicable, (i) the gain on sale of assets associated with the sale of the Company’s real property, (ii) the charge from the impairment of assets held for sale, and the losses from assets sold, associated with the Company’s divestiture of its disposal group, (iii) Duarte move related costs, (iv) the purchase accounting impacts related to the amortization of the backlog intangible acquired in connection with the acquisition of L’Orange on June 1, 2018 (the “L’Orange Acquisition”), (v) costs associated with the previously proposed merger with Hexcel, which merger agreement was terminated on April 5, 2020 (vi) transaction costs associated with the completed divestiture of the disposal group, (vii) restructuring charges related to the COVID-19 pandemic, (viii) acceleration of stock compensation expense related to restructuring activities, (ix) the net gain on settlement of cross-currency interest rate swaps, (x) costs related to the fourth quarter of fiscal year 2019 impairment of accounts receivable, inventory and certain other assets in connection with Senvion, a significant customer of Woodward renewables business, which declared insolvency in fiscal year 2019, and (ix) the transition impacts during fiscal year 2019 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. The Company 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. The Company 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. The Company 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 years ended September 30, 2020 and September 30, 2019 are shown in the tables below.

	Year Ended September 30,			
	2020		2019	
	Net Earnings	Earnings Per Share	Net Earnings	Earnings Per Share
Net earnings (U.S. GAAP)	\$ 240,395	\$ 3.74	\$ 259,602	\$ 4.02
Non-U.S. GAAP adjustments:				
Gain on sale of properties, net of tax ¹	(18,551)	(0.29)	—	—
Impairment from assets sold, net of tax	28,016	0.44	—	—
Duarte move related costs, net of tax	—	—	20,385	0.32
Purchase accounting impact, net of tax ²	—	—	14,964	0.23
Merger and divestiture transaction costs, net of tax ³	12,307	0.19	—	—
Restructuring charges related to COVID-19, net of tax	16,621	0.26	—	—
Loss on sale of disposal group, net of tax	365	0.01	—	—
Acceleration of stock compensation, net of tax	1,788	0.03	—	—
Net gain on cross-currency interest rate swaps, net of tax ⁴	(26,904)	(0.42)	—	—
Impairment of Servion related assets, net of tax	—	—	8,937	0.14
Sub-total non-U.S. GAAP adjustments	13,642	0.22	44,286	0.69
Impact of December 2017 changes to U.S. tax law	—	—	10,588	0.17
Total non-U.S. GAAP adjustments	13,642	0.22	54,874	0.86
Adjusted net earnings (Non-U.S. GAAP)	<u>\$ 254,037</u>	<u>\$ 3.96</u>	<u>\$ 314,476</u>	<u>\$ 4.88</u>

- (1) The gain on sale of properties, net of tax, includes (i) the gain of \$16,798 on sale of the Duarte, California property, and (ii) the gain of \$1,753 on sale of the Loveland, Colorado property.
- (2) The purchase accounting impacts related to the Woodward L'Orange amortization of the backlog intangible for the fiscal year ended September 30, 2019.
- (3) Merger and divestiture transaction costs, net of tax, include, as applicable, (i) transaction costs and integration planning costs associated with the now-terminated merger agreement with Hexcel and (ii) transaction costs associated with the divestiture of the disposal group.
- (4) The net gain on cross-currency interest rate swaps, net of tax, includes (i) the net gains of \$29,841 realized on termination of the instruments and (ii) the swap breakage fees of \$2,937 associated with termination of the instruments.

Adjusted Industrial segment earnings is defined by the Company as Industrial segment earnings excluding the purchase accounting impacts related to the L'Orange 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 Company believes adjusted Industrial segment earnings excluding the disposal group further illustrates more clearly how the underlying business of Woodward's Industrial segment is performing, as earnings for the disposal group are no longer related to the ongoing operations of the Industrial segment business.

The reconciliation of Industrial segment earnings to adjusted Industrial segment earnings and adjusted Industrial segment earnings excluding the disposal group for the fiscal years ended September 30, 2020 and September 30, 2019 are shown in the table below.

	Year Ended September 30,	
	2020	2019
Industrial segment earnings (U.S. GAAP)	\$ 100,321	\$ 93,521
Purchase accounting impacts ¹	—	21,100
Adjusted Industrial segment earnings (Non-U.S. GAAP)	100,321	114,621
Disposal group losses (earnings)	(3,602)	3,788
Adjusted Industrial segment earnings excluding disposal group (Non-U.S. GAAP)	<u>\$ 96,719</u>	<u>\$ 118,409</u>

- (1) The purchase accounting impacts relate to the Woodward L'Orange amortization of the backlog intangible for the fiscal year ended September 30, 2019.

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 expenses, which are non-operating expenses and may be driven by factors outside of our operations, such as changes in tax laws or regulations, and, in the case of EBITDA, the noncash 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 include additional non-U.S. GAAP adjustments to EBIT and EBITDA, in each case adjusted to exclude, as applicable, (i) the gain on sale of assets associated with the sale of the Company's Duarte and Loveland Campus real property, (ii) the charge from the impairment of assets held for sale, and the losses from assets sold, associated with the Company's divestiture of its disposal group, (iii) Duarte move related costs, (iv) the purchase accounting impacts related to the amortization of the backlog intangible acquired in connection with the acquisition of Woodward L'Orange on June 1, 2018 (the "L'Orange Acquisition"), (v) costs associated with the now-terminated merger agreement with Hexcel, (vi) transaction costs associated with the completed divestiture of the disposal group, (vii) restructuring charges related to the COVID-19 pandemic, (viii) acceleration of stock compensation expense related to restructuring activities, (ix) the net gain on settlement of cross-currency interest rate swaps, and (x) costs related to the fourth quarter of fiscal year 2019 impairment of accounts receivable, inventory and certain other assets in connection with Senvion, a significant customer of Woodward renewables business, which declared insolvency in fiscal year 2019. As these gains and charges are infrequent or unusual items that can be variable from period to period and do not fluctuate with operating results, management believes that by removing these gains and 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, 2020 and September 30, 2019 were as follows:

	Year Ended September 30,	
	2020	2019
Net earnings (U.S. GAAP)	\$ 240,395	\$ 259,602
Income tax expense	41,486	61,010
Interest expense	35,811	44,001
Interest income	(1,764)	(1,413)
EBIT (Non-U.S. GAAP)	<u>315,928</u>	<u>363,200</u>
Non-U.S. GAAP adjustments:		
Gain on sale of properties ¹	(24,653)	—
Impairment from assets sold	37,902	—
Duarte move related costs	—	27,089
Purchase accounting impact ²	—	21,100
Merger and divestiture transaction costs ³	16,355	—
Restructuring charges related to COVID-19	22,216	—
Loss on sale of disposal group	515	—
Acceleration of stock compensation	2,376	—
Net gain on cross-currency interest rate swaps ⁴	(27,481)	—
Impairment of Senvion related assets	—	12,601
Total non-U.S. GAAP adjustments	<u>27,230</u>	<u>60,790</u>
Adjusted EBIT (Non-U.S. GAAP)	<u>\$ 343,158</u>	<u>\$ 423,990</u>

- (1) The gain on sale of properties includes (i) the gain of \$22,323 on sale of the Duarte property, and (ii) the gain of \$2,330 on sale of the Loveland property.
- (2) The purchase accounting impacts relate to the amortization of the backlog intangible, net of tax, acquired in connection with the L'Orange Acquisition.
- (3) Merger and divestiture transaction costs include, as applicable, (i) transaction costs and integration planning costs associated with the now-terminated merger agreement with Hexcel and (ii) transaction costs associated with the divestiture of the disposal group.
- (4) The net gain on cross-currency interest rate swaps includes (i) the net gains of \$30,481 realized on termination of the instruments, and (ii) the swap breakage fees of \$3,000 associated with termination of the instruments.

EBITDA and adjusted EBITDA for fiscal years ended September 30, 2020 and September 30, 2019 were as follows:

	Year Ended September 30,	
	2020	2019
Net earnings (U.S. GAAP)	\$ 240,395	\$ 259,602
Income tax expense	41,486	61,010
Interest expense	35,811	44,001
Interest income	(1,764)	(1,413)
Amortization of intangible assets	39,458	56,022
Depreciation expense	91,700	85,982
EBITDA (Non-U.S. GAAP)	447,086	505,204
Non-U.S. GAAP adjustments:		
Gain on sale of properties ¹	(24,653)	—
Impairment from assets sold	37,902	—
Duarte move related costs	—	27,089
Merger and divestiture transaction costs ²	16,355	—
Restructuring charges related to COVID-19	22,216	—
Loss on sale of disposal group	515	—
Acceleration of stock compensation	2,376	—
Net gain on cross-currency interest rate swaps ³	(27,481)	—
Impairment of Servion related assets	—	12,601
Total non-U.S. GAAP adjustments	27,230	39,690
Adjusted EBITDA (Non-U.S. GAAP)	<u>\$ 474,316</u>	<u>\$ 544,894</u>

- (1) The gain on sale of properties includes (i) the gain of \$22,323 on sale of the Duarte property, and (ii) the gain of \$2,330 on sale of the Loveland property.
- (2) Merger and divestiture transaction costs include, as applicable, (i) transaction costs and integration planning costs associated with the now-terminated merger agreement with Hexcel and (ii) transaction costs associated with the divestiture of the disposal group.
- (3) The net gain on cross-currency interest rate swaps includes (i) the net gains of \$30,481 realized on termination of the instruments, and (ii) the swap breakage fees of \$3,000 associated with termination of the instruments.

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. Adjusted free cash flow includes additional non-U.S. GAAP adjustments to free cash flow to include cash proceeds from the sale of real property located at our former operations in Duarte, California, and exclude, as applicable, cash paid for merger and divestiture related transaction costs, cash paid for restructuring charges, and cash proceeds received on settlement of our cross-currency interest rate swaps. Management believes that by including or excluding these items, as applicable, in free cash flow it better portrays the cash impact from our fiscal year 2018 decision to relocate our Duarte, California operations to the renovated Drake Campus in Fort Collins, Colorado and excludes the infrequent or unusual cash payments for merger and divestiture transaction costs, restructuring charges, and proceeds from settlement of derivative instruments, which are not indicative of the Company's operating performance for the period.

The use of these 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 and adjusted free cash flow do not necessarily represent funds available for discretionary use and are not necessarily a measure of our ability to fund our cash needs. Our calculation of free cash flow and adjusted free cash flow may differ from similarly titled measures used by other companies, limiting their usefulness as a comparative measure.

Free cash flow and adjusted free cash flow for the fiscal years ended September 30, 2020 and September 30, 2019 were as follows:

	Year Ended September 30,	
	2020	2019
Net cash provided by operating activities (U.S. GAAP)	\$ 349,491	\$ 390,608
Payments for property, plant and equipment	(47,087)	(99,066)
Free cash flow (Non-U.S. GAAP)	<u>\$ 302,404</u>	<u>\$ 291,542</u>
Cash proceeds from the sale of the Duarte facility	30,089	—
Cash paid for merger and divestiture transaction costs	19,853	—
Cash paid for restructuring charges	18,065	—
Net cash proceeds from cross currency interest rate swaps	(55,191)	—
Adjusted free cash flow (Non-U.S. GAAP)	<u>\$ 315,220</u>	<u>\$ 291,542</u>

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

Revenue is recognized on contracts with Woodward's customers for arrangements in which quantities and pricing are fixed and/or determinable and are generally based on customer purchase orders, often within the framework of a long-term supply arrangement with the customer.

Sales of Products

Woodward primarily generates revenue through the manufacture and sale of engineered aerospace and industrial products, including revenue derived from maintenance, repair and overhaul ("MRO") performance obligations performed on products originally manufactured by Woodward and subsequently returned by original equipment manufacturer ("OEM") or other end-user customers. The majority of Woodward's costs incurred to satisfy MRO performance obligations are related to replacing and/or refurbishing component parts of the returned products to restore the units back to a condition generally comparable to that of the unit upon its initial sale to an OEM customer. Therefore, Woodward considers almost all of its revenue to be derived from product sales, including those related to MRO.

Many Woodward products include embedded software or firmware that is critical to the performance of the product as designed. As the embedded software or firmware is essential to the functioning of the products sold it does not represent a distinct performance obligation separate from the related tangible product in which the software or firmware is embedded. Woodward does not generally sell or license software or firmware on a standalone basis. Software or firmware upgrades, if any, are generally paid for by the customer and treated as separate performance obligations.

The products Woodward sells generally are not subject to risk of return, refund or other similar obligations. Woodward's sales include product warranty arrangements with customers which are generally assurance-type warranties, rather than service-type warranties. Accordingly, Woodward accounts for warranty related promises to its customers as a guarantee for which a warranty liability is recorded when the related product or service is sold, rather than as a distinct performance obligation accounted for separately from the sale of the underlying product or service. Warranty liabilities are accrued for based on specifically identified warranty issues that are probable to result in future costs, or on a non-specific basis whenever past experience indicates that a normal and predictable pattern exists.

Revenue from shipping and handling activities charged to customers are included in net sales when invoiced to the customer and the related costs are included in cost of goods sold. Shipping and handling costs relating to the sale of products recognized at a point in time are recognized as incurred. Shipping and handling costs relating to the sale of products or services recognized over time are accrued and recognized during the earnings process.

Material Rights and Costs to Fulfill a Contract

Customers sometimes pay consideration to Woodward for product engineering and development activities that do not result in the immediate transfer of distinct products or services to the customer. There is an implicit assumption that without the customer making such advance payments to Woodward, Woodward's future sales of products or services to the customer would be at a higher selling price; therefore, such payments create a "material right" to the customer that effectively gives the customer an option to acquire future products or services, at a discount, that are dependent upon the product engineering and development. Material rights are recorded as contract liabilities and will be recognized when control of the related products or services are transferred to the customer.

Woodward capitalizes costs of product engineering and development identified as material rights up to the amount of customer funding as costs to fulfill a contract because the costs incurred up to the amount of the customer funding commitment are recoverable. Due to the uncertainty of the product success and/or demand, fulfillment costs in excess of the customer funding are expensed as incurred.

Woodward recognizes the deferred material rights as revenue based on a percentage of actual sales to total estimated lifetime sales of the related developed products as the customers exercise their option to acquire additional products or services at a discount. Woodward amortizes the capitalized costs to fulfill a contract as cost of goods sold proportionally to the recognition of the associated deferred material rights. Estimated total lifetime sales are reviewed at least annually and more frequently when circumstances warrant a modification to the previous estimate.

Point in time and over time revenue recognition

Approximately one-half of Woodward's customer contracts are recognized at the point in time when control of the products transfers to the customer, generally upon shipment of products, consistent with Woodward's historical revenue recognition model. The remaining portion of Woodward's revenues from sales of products and services to customers is 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 described below.

Control of the products generally transfers to the customer at a point in time, as the customer does not control the products as they are produced. Woodward exercises judgment and considers the timing of right of payment, transfer of the risk and rewards, transfers of title, transfer of physical possession, and customer acceptance when determining when control of the product transfers to the customer, generally upon shipment of products, consistent with Woodward's historical revenue recognition model.

Performance obligations are satisfied and revenue is recognized over time if: (i) the customer receives the benefits as Woodward performs work, if the customer controls the asset as it is being enhanced, or if the product being produced for the customer has no alternative use to Woodward; and (ii) Woodward has an enforceable right to payment with a profit. For products being produced for the customer that have no alternative use to Woodward and Woodward has an enforceable right to payment with a profit, and where the products are substantially the same and have the same pattern of transfer to the customer, revenue is recognized as a series of distinct products. As Woodward satisfies MRO performance obligations, revenue is recognized over time, as the customer, rather than Woodward, controls the asset being enhanced. When services are provided, revenue from those services is recognized over time because control is transferred continuously to customers as Woodward performs the work. As a practical expedient, revenue for services that are short-term in nature are recognized using an output method as the customer is invoiced, as the invoiced amount corresponds directly to Woodward's performance to date on the arrangement.

For services that are not short-term in nature, MRO, and sales of products that have no alternative use to Woodward and an enforceable right to payment with a profit, Woodward uses an actual cost input measure to determine the extent of progress towards completion of the performance obligation. For these revenue streams, revenue is recognized over time as work is performed based on the relationship between actual costs incurred to-date for each contract and the total estimated costs for such contract at completion of the performance obligation (the cost-to-cost method). Woodward has concluded that this measure of progress best depicts the transfer of assets to the customer, because incurred costs are integral to Woodward's completion of the performance obligation under the specific customer contract and correlate directly to the transfer of control to the customer. Contract costs include labor, material and overhead. Contract cost estimates are based on various assumptions to project the outcome of future events. These assumptions include labor productivity and availability; the complexity of the work to be performed; the cost and availability of materials; the performance of subcontractors; and the availability and timing of funding from the customer. Revenues, including estimated fees or profits, are recorded proportionally as costs are incurred.

A change in one or more of these estimates could affect the timing of revenue recognition on these contracts. Woodward reviews and updates its cost estimates regularly. Due to uncertainties inherent in the estimation process, it is reasonably possible that completion costs may be different than those estimated. Such changes in cost estimates and the related impact on the revenue recognized in the period in which the revisions are determined is recorded as a cumulative catch-up adjustment. The production of products and MRO activities are generally shorter-term in nature and therefore, the impacts of changes in estimates for these costs are considered immaterial.

If at any time the estimate of contract profitability indicates an anticipated loss on the contract, Woodward recognizes provisions for estimated losses on uncompleted contracts in the period in which such losses are determined. In situations where the creditworthiness of a customer becomes in doubt, Woodward ceases to recognize the over-time revenue on the associated customer contract.

Occasionally Woodward sells maintenance or service arrangements, extended warranties, or other stand ready services. Woodward recognizes revenue from such arrangements as a series of performance obligations over the time period in which the services are available to the customer.

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. For discussion of the critical accounting estimates related to inventory provided by customers to Woodward, which will be integrated into final products sold to those customers, see Note 3, *Revenue*, to the Notes to the Consolidated Financial Statements included in "Item 8 – Financial Statements and Supplementary Data."

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 \$437,943 at September 30, 2020 and \$516,836 at September 30, 2019. 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 firm and expected orders in a reasonable time frame, which we believe mitigates our exposure to future inventory carrying cost adjustments.

Reviews for impairment of goodwill and other indefinitely lived intangible assets

At September 30, 2020, we had \$808,252 of goodwill representing 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 indicate the fair value of a reporting unit may be below its carrying amount.

In the first quarter of fiscal year 2020, Woodward determined that the approved plan to divest of the disposal group (see Note 11, *Sale of businesses*) represented a triggering event requiring the long-lived assets attributable to the disposal group be assessed for impairment. Given the facts and circumstances at the time, Woodward determined that the remaining value of the goodwill of the disposal group was not recoverable and an \$8,640 non-cash impairment charge was recorded during fiscal year 2020.

For purposes of performing the impairment test, 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 test consists 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.

During the fourth quarter, Woodward completed its annual goodwill impairment test as of July 31, 2020 for the fiscal year ended September 30, 2020. 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 five-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, 2020 impairment test were discounted using weighted-average cost of capital assumptions ranging from 8.30% to 9.99%. The terminal values of the forecasted cash flows were calculated using the Gordon Growth Model and assumed an annual compound growth rate after five years of 3.44%. 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, 2020, indicated the estimated fair value of each reporting unit was in excess of its carrying value, and accordingly, no impairment existed. The July 31, 2020 goodwill analysis indicated a premium of approximately 17% compared to the carrying value of one of our reporting units in the Aerospace segment, which is primarily comprised of the thrust reverser actuation systems ("TRAS") business and was significantly impacted by the COVID-19 related declines in commercial OEM and aftermarket. We are not aware of any facts, circumstances or triggering events that have arisen indicating that goodwill has been impaired or that the premium of approximately 17% has changed significantly for this reporting unit since Woodward's July 31, 2020 analysis.

We have one indefinitely lived intangible asset consisting of the Woodward L'Orange tradename. At September 30, 2020, the carrying value of the Woodward L'Orange tradename intangible asset was \$68,094, representing 2% of our total assets. The Woodward L'Orange tradename intangible asset is tested for impairment on an annual basis and more often if an event occurs or circumstances change that indicate the fair value of the Woodward L'Orange intangible asset may be below its carrying amount. The impairment test consists of comparing the fair value of the Woodward L'Orange tradename intangible asset, determined using discounted cash flows based on the relief from royalty method under the income approach, with its carrying amount. If the carrying amount of the Woodward L'Orange tradename intangible asset exceeds its fair value, an impairment loss would be recognized to reduce the carrying amount to its fair value. Woodward has not recorded any impairment charges associated with the indefinitely lived intangible asset.

During the fourth quarter, Woodward completed its annual impairment test, for the fiscal year ended September 30, 2020, of the Woodward L'Orange tradename intangible asset as of July 31, 2020. The fair value of the Woodward L'Orange tradename intangible assets was determined using discounted cash flows based on the relief from royalty method under the income approach. 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, royalty rates, 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 the forecasted cash flow. Management projects revenue growth rates and cash flows based on Woodward L'Orange's current operational results, expected performance and operational strategies over a five year period. These projections are adjusted to reflect current economic conditions and demand for certain products and require considerable management judgment.

The forecasted cash flow used in the July 31, 2020 impairment test was discounted using weighted-average cost of capital assumption of 8.50%. The terminal value of the forecasted cash flow was calculated using the Gordon Growth Model and assumed an annual compound growth rate after five years of 3.44%. 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 the forecasted cash flow. The results of impairment test performed as of July 31, 2020 indicated the estimated fair value of the Woodward L'Orange tradename intangible asset was in excess of its carrying value, and accordingly, no impairment existed.

As part of the Company's ongoing monitoring efforts to assess goodwill and the Woodward L'Orange tradename indefinite lived asset 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 or the Woodward L'Orange business, 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.

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. Excluding the Woodward HRT Plan, which is only partially frozen to salaried participants, the defined benefit plans in the United States were frozen in fiscal year 2007 and no additional employees may participate in the U.S. plans and no additional service costs will be incurred.

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, 2020, our recorded assets and liabilities included a net liability of \$40,914 for our defined benefit pension plans and a net liability of \$25,445 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, 2020 were based on the Society of Actuaries ("SOA") Pri-2012 Mortality Tables Report using the SOA's Mortality Improvement Scale MP-2019 ("MP-2019") and projected forward using a custom projection scale based on MP-2019 with a 5-year convergence period and a long-term rate of 0.75%. The projected benefit obligations in the United States as of September 30, 2019 were based on the 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, 2020, mortality assumptions in Japan were based on the Standard rates 2020 and mortality assumptions for the United Kingdom pension scheme were based on the Self-administered pension scheme ("SAPS") S3 "all" tables with a projected 1.5% annual improvement rate. Compared to September 30, 2019, where mortality assumptions in Japan were based on the Standard rates 2014 and mortality assumptions for the United Kingdom pension scheme were based on the Self-administered pension scheme ("SAPS") S2 "all" tables with a projected 1.5% annual improvement rate. As of September 30, 2020, and September 30, 2019, mortality assumptions in Germany were based on the Heubeck 2018 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, 2020 and 2019, 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, 2019 and 2018 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:		
2021 Net Periodic Benefit Cost	\$ (326)	\$ 1,578
2021 Projected Service and Interest Costs	794	(1,229)
Accumulated Post Retirement Benefit Obligation as of September 30, 2020	(41,668)	53,397

- 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:		
2021 Net Periodic Benefit Cost	\$ (1,311)	\$ 1,311

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:		
2021 Net Periodic Benefit Cost	\$ 115	\$ (198)
2021 Projected Service and Interest Costs	175	(210)
Accumulated Post Retirement Benefit Obligation as of September 30, 2020	(2,010)	2,329

- 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.

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, as 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, 2020 and September 30, 2019, unrecognized gross tax benefits for which recognition has been deferred were \$9,851 and \$10,305, 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 \$1,833 as of September 30, 2020 and \$3,638 as of September 30, 2019.

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 resulted in a discrete net charge to Woodward’s income tax expense in the amount of \$14,778, which was recorded in the three-months ended December 31, 2017. After adjustments to amounts made throughout fiscal year 2018, the net impact of the enactment of the Tax Act was \$10,860. Woodward finalized its assessment of the income tax effects of the Tax Act in the first quarter of fiscal year 2019. On June 14, 2019, the Internal Revenue Service (“IRS”) issued final regulations that modified the Transition Tax computation required by the Tax Act. As a result, in the three-months ended June 30, 2019, Woodward recognized additional income tax expense related to the Transition Tax of \$10,588.

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, Woodward records through income tax expense all future excess tax benefits and tax deficiencies from stock options exercised. This 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, 2020, 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, 2020 and the average borrowings on our revolving credit facility in fiscal year 2020 would cause our annual interest expense to increase approximately \$2,727. A hypothetical 1% decrease in the assumed effective interest rates that apply to the variable rate loan outstanding as of September 30, 2020 and the average borrowings on our revolving credit facility in fiscal year 2020 would decrease our annual interest expense by approximately \$2,727.

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, 2020 was 2.75% in the United States, 1.62% in the United Kingdom, 1.10% in Japan, and 0.97% in Germany. The weighted average discount rate assumption used to value the other postretirement benefit plans was 2.45%.

In the United States, the discount rate used to determine the periodic benefit costs for the year ending September 30, 2020 is consistent with the discount rate used to determine the benefit obligation as of September 30, 2019, or 2.75%. 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, 2020. The weighted average discount rate assumption used to value the service costs for the defined benefit pension plans will be 1.71% in the United Kingdom, 1.33% in Japan and 1.11% in Germany. The weighted average discount rate assumption used to value the interest costs for the defined benefit pension plans will be 1.41% in the United Kingdom, 0.74% in Japan and 0.76% 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, 2020 is consistent with the discount rate used to determine the benefit obligation as of September 30, 2019, or 2.45%.

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, 2020. 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.

<u>Assumption</u>	<u>Change</u>	<u>Increase/(Decrease) In</u>		
		<u>2021 Net Periodic Benefit Cost</u>	<u>2021 Projected Service and Interest Costs</u>	<u>Accumulated Post Retirement Benefit Obligation as of Sept. 30, 2020</u>
Defined benefit pension benefits:				
Change in discount rate	1% increase	\$ (326)	\$ 794	\$ (41,668)
	1% decrease	1,578	(1,229)	53,397
Other postretirement benefits:				
Change in discount rate	1% increase	115	175	(2,010)
	1% decrease	(198)	(210)	2,329

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, 2020 and 2019, the percentages of our net sales denominated in a currency other than the USD were as follows:

Functional currency:	<u>Percentage of Net Sales</u>	<u>Percentage of Net Sales</u>
	<u>For the Year Ended September 30, 2020</u>	<u>For the Year Ended September 30, 2019</u>
EUR	14.7%	16.0%
RMB	6.8%	5.7%
JPY	1.7%	2.2%
GBP	2.2%	2.1%
All other foreign currencies	1.3%	1.3%
	<u>26.7%</u>	<u>27.3%</u>

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, 2020 and 2019, we had no open foreign currency exchange rate contracts and all previous exchange rate derivative instruments were settled or terminated.

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 private placement notes entered into in May 2018 (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.

In May 2020, as a result of the COVID-19 pandemic and uncertainties in future cash flows, Woodward terminated the Floating-Rate Cross-Currency Swap and Fixed-Rate Cross-Currency Swaps. At the date of settlement, the total notional value of the Floating-Rate Cross-Currency Swap and Fixed-Rate Cross-Currency Swaps was \$108,823 and \$400,000, respectively. Woodward received net cash proceeds of \$59,571, which includes \$58,191 related to the fair value of the derivative assets and \$4,380 of net accrued interest, less payment of \$3,000 for fees to terminate the swap agreements. The proceeds received for the fair value of the instruments is recorded in "Other", while net accrued interest is recorded in "Other" and "Accrued liabilities", respectively, in cash flows provided by operating activities of Woodward's Consolidated Statements of Cash Flows. The fees to terminate the swap agreements were recorded as incurred and presented in the line item "Selling, general and administrative" expenses in Woodward's Consolidated Statements of Earnings.

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, 2020, we recognized a loss related to the cross-currency swaps of \$18,262 in accumulated OCI as compared to a gain of \$47,759 in the year ended September 30, 2019. The associated earnings reclassification of \$2,206 for the year ended September 30, 2020 and \$31,374 in the year ended September 30, 2019 were recorded as a foreign currency transaction gain and loss, respectively, included in "Selling, general and administrative costs" in the Consolidated Statements of Earnings. For both the year ended September 30, 2020 and 2019, the gain or loss included in "Selling, general and administrative costs" offset the reciprocal loss or 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 losses on the Series M Notes of \$3,199 for the fiscal year ended September 30, 2020, a gain of \$2,682 for the fiscal year ended September 30, 2019 and gains of \$838 for the fiscal year ended September 30, 2018, are included in foreign currency translation adjustments within total comprehensive earnings.

For more information on derivative instruments, see Note 9, *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 mitigated 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 gain of \$194 in fiscal year 2020 and a net foreign currency loss of \$1,018 in fiscal year 2019 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 Stockholders and Board of Directors 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, 2020 and 2019, the related consolidated statements of earnings, comprehensive earnings, shareholders' equity, and cash flows, for each of the three years in the period ended September 30, 2020, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of September 30, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended September 30, 2020, 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, 2020, 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 20, 2020, expressed an unqualified opinion on the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 5 to the financial statements, effective October 1, 2019, the Company adopted FASB Accounting Standards Update 2016-02, *Leases (Topic 842)*, using the modified retrospective transition method.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

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

Goodwill — Refer to Notes 1 and 14 to the financial statements

Critical Audit Matter Description

The Company tests goodwill for impairment at the reporting unit level on an annual basis or at any time there is an indication goodwill may be impaired. The Company completed its annual goodwill impairment test as of July 31, 2020. The results of the goodwill impairment tests performed as of July 31, 2020 did not indicate impairment of any reporting units. The Company's July 31, 2020 goodwill analysis indicated a premium of approximately 17% compared to the carrying value of one of its reporting units in the Aerospace segment, which is primarily comprised of the thrust reverser actuation systems ("TRAS") business and was significantly impacted by the COVID-19 related declines in commercial OEM and aftermarket during fiscal year 2020. Of the \$808.3 million of Goodwill as of September 30, 2020, \$78.5 million was allocated to this reporting unit.

The fair value of each of Woodward's reporting units was determined using a discounted cash flow method. This method incorporates various estimates and assumptions, the most significant being projected revenue growth rates, earnings margins, and the present value, based on an estimated weighted-average cost of capital (or the discount rate) and terminal growth rate. Management projects revenue growth rates and cash flows based on each reporting unit's current operational results, expected performance and operational strategies over a five-year period. These projections are adjusted to reflect current economic conditions and demand for certain products, and require considerable management judgment. Changes in these estimates and assumptions can have a significant impact on the fair value of forecasted cash flows.

We identified the fair value of this reporting unit as a critical audit matter because of the relatively low premium of fair value over carrying value, and the significant judgments and assumptions management makes related to the projection of revenue growth rates, earnings margins, and the selection of the discount rate and terminal growth rate. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists, when performing audit procedures to evaluate the reasonableness of management's projection of revenue growth rates, earnings margins, and selection of the discount rate and terminal growth rate.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the forecasts of future revenue and earnings margin, and the selection of the discount rate and terminal growth rate used in determining the fair value of this reporting unit included the following, among others:

- We tested the effectiveness of controls over the fair value of the reporting unit, including those over the projection of revenue and earnings margin growth rates and the selection of the discount rate and terminal growth rate.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the discount rate and terminal growth rate by:
 - Testing the source information underlying the determination of the discount rate and terminal growth rate and recalculating the mathematical accuracy of management's calculation of the discount rate.
 - Developing a range of independent estimates over each assumption and comparing those to the discount rate and terminal growth rate selected by management.
- We evaluated the reasonableness of management's projected revenue growth rates and earnings margins by:
 - Comparing management's projections to:
 - Historical results for the reporting unit
 - Internal communications to management and the board of directors
 - Analyst and industry reports
 - Considering the impact of changes in the regulatory environment on management's forecasts.
 - Considering the impact of changes in management's projections from the July 31, 2020, annual assessment date, to September 30, 2020 by comparing actual results for the period to management projections within the original valuation model.

Intangible Assets, net - tradename — Refer to Notes 1 and 15 to the financial statements

Critical Audit Matter Description

The Company has one indefinitely lived intangible asset consisting of the Woodward L'Orange tradename ("tradename"). As of September 30, 2020, the carrying value of the tradename is \$68.1 million. The tradename is tested for impairment on an annual basis and more often if an event occurs or circumstances change that indicate the fair value of the tradename may be below its carrying amount. The Company completed its annual impairment test of the tradename as of July 31, 2020. The results of impairment test indicated the estimated fair value of the tradename was in excess of its carrying value, and accordingly, no impairment existed.

The fair value of the tradename was determined using discounted cash flows based on the relief from royalty method under the income approach. This method incorporates various estimates and assumptions, the most significant being projected revenue growth rates, royalty rates, and the present value of the forecasted cash flows based on the discount rate and terminal growth rate. The Company projects revenue growth rates and cash flows based on Woodward L'Orange's current operational results, expected performance and operational strategies over a five-year period. These projections are adjusted to reflect current economic conditions and demand for certain products and require considerable management judgment. Changes in these estimates and assumptions can have a significant impact on the fair value.

We identified the fair value of the tradename as a critical audit matter because of the significant judgments and assumptions management makes related to the projection of revenue growth rates and the selection of the discount rate, terminal growth rate, and royalty rate. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists, when performing audit procedures to evaluate the reasonableness of management's projection of revenue growth rates and selection of the discount rate, terminal growth rate, and royalty rate.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the projection of revenue growth rates and selection of the discount rate, terminal growth rate, and royalty rate used in determining the fair value of the tradename included the following, among others:

- We tested the effectiveness of controls over the fair value of the tradename, including those over the projection of revenue growth rates and the selection of the discount rate, terminal growth rate, and royalty rate.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the discount rate, terminal growth rate, and royalty rate by:
 - Testing the source information underlying the determination of the discount rate, terminal growth rate, and royalty rate and recalculating the mathematical accuracy of management's calculation of the discount rate.
 - Developing a range of independent estimates over each assumption and comparing those to the discount rate, terminal growth rate, and royalty rate selected by management.
- We evaluated the reasonableness of management's projected revenue growth rates by:
 - Comparing management's projections to:
 - Historical revenue results for Woodward L'Orange
 - Internal communications to management and the board of directors
 - Analyst and industry reports
 - Considering the impact of changes in the regulatory environment on management's forecasts.
 - Considering the impact of changes in management's projections from the July 31, 2020, annual assessment date to September 30, 2020 by comparing actual results for the period to management projections within the original valuation model.

/s/ DELOITTE & TOUCHE LLP

Denver, Colorado

November 20, 2020

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,		
	2020	2019	2018
Net sales	\$ 2,495,665	\$ 2,900,197	\$ 2,325,873
Costs and expenses:			
Cost of goods sold	1,855,422	2,192,654	1,722,802
Selling, general and administrative expenses	217,710	211,205	193,736
Research and development costs	133,134	159,107	148,279
Impairment of assets sold	37,902	–	–
Restructuring charges	22,216	–	17,013
Gain on cross-currency interest rate swaps, net	(30,481)	–	–
Interest expense	35,811	44,001	40,465
Interest income	(1,764)	(1,413)	(1,674)
Other (income) expense, net	(56,166)	(25,969)	(14,326)
Total costs and expenses	2,213,784	2,579,585	2,106,295
Earnings before income taxes	281,881	320,612	219,578
Income tax expense	41,486	61,010	39,200
Net earnings	\$ 240,395	\$ 259,602	\$ 180,378
Earnings per share:			
Basic earnings per share	\$ 3.86	\$ 4.19	\$ 2.93
Diluted earnings per share	\$ 3.74	\$ 4.02	\$ 2.82
Weighted Average Common Shares Outstanding:			
Basic	62,267	61,950	61,493
Diluted	64,209	64,498	63,876

See accompanying Notes to Consolidated Financial Statements

WOODWARD, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE EARNINGS

(In thousands)

	Year Ended September 30,		
	2020	2019	2018
Net earnings	\$ 240,395	\$ 259,602	\$ 180,378
Other comprehensive earnings:			
Foreign currency translation adjustments	15,668	(16,554)	(12,985)
Net (loss) gain on foreign currency transactions designated as hedges of net investments in foreign subsidiaries	(3,199)	2,682	838
Taxes on changes on foreign currency translation adjustments	75	476	(367)
Foreign currency translation and transactions adjustments, net of tax	12,544	(13,396)	(12,514)
Unrealized (loss) gain on fair value adjustment of derivative instruments	(18,262)	47,759	(23,000)
Reclassification of net realized losses (gains) on derivatives to earnings	2,134	(31,446)	1,467
Taxes on changes on derivative transactions	626	(326)	456
Derivative adjustments, net of tax	(15,502)	15,987	(21,077)
Minimum retirement benefit liability adjustments:			
Net gain (loss) arising during the period	20,179	(43,817)	13,805
Prior service cost arising during the period	—	(601)	—
Loss due to settlement or curtailment arising during the period	—	—	59
Amortization of:			
Prior service cost	962	704	551
Net loss	2,523	955	985
Foreign currency exchange rate changes on minimum retirement benefit liabilities	(1,672)	1,318	367
Taxes on changes on minimum retirement benefit liability adjustments	(5,522)	10,531	(3,932)
	16,470	(30,910)	11,835
Total comprehensive earnings	<u>\$ 253,907</u>	<u>\$ 231,283</u>	<u>\$ 158,622</u>

See accompanying Notes to Consolidated Financial Statements

WOODWARD, INC.
CONSOLIDATED BALANCE SHEETS

(In thousands, except per share amounts)

	<u>September 30,</u> <u>2020</u>	<u>September 30,</u> <u>2019</u>
ASSETS		
Current assets:		
Cash and cash equivalents, including restricted cash of \$3,497 and \$1,500, respectively	\$ 153,270	\$ 99,073
Accounts receivable, less allowance for uncollectible amounts of \$6,889 and \$7,908, respectively	537,987	591,529
Inventories	437,943	516,836
Income taxes receivable	28,879	8,099
Other current assets	52,786	55,691
Total current assets	1,210,865	1,271,228
Property, plant and equipment, net	997,415	1,058,775
Goodwill	808,252	797,853
Intangible assets, net	606,711	611,992
Deferred income tax assets	14,658	18,161
Other assets	265,435	198,517
Total assets	<u>\$ 3,903,336</u>	<u>\$ 3,956,526</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings	\$ —	\$ 220,000
Current portion of long-term debt	101,634	—
Accounts payable	134,242	240,460
Income taxes payable	4,662	18,849
Accrued liabilities	151,794	228,127
Total current liabilities	392,332	707,436
Long-term debt, less current portion	736,849	864,899
Deferred income tax liabilities	163,573	151,362
Other liabilities	617,905	506,088
Total liabilities	<u>1,910,659</u>	<u>2,229,785</u>
Commitments and contingencies (Note 23)		
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	231,936	207,120
Accumulated other comprehensive losses	(89,794)	(103,306)
Deferred compensation	9,222	9,382
Retained earnings	2,427,905	2,224,919
	2,579,375	2,338,221
Treasury stock at cost, 10,277 shares and 11,040 shares, respectively	(577,476)	(602,098)
Treasury stock held for deferred compensation, at cost, 199 shares and 211 shares, respectively	(9,222)	(9,382)
Total stockholders' equity	1,992,677	1,726,741
Total liabilities and stockholders' equity	<u>\$ 3,903,336</u>	<u>\$ 3,956,526</u>

See accompanying Notes to Consolidated Financial Statements

WOODWARD, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended September 30,		
	2020	2019	2018
Cash flows from operating activities:			
Net earnings	\$ 240,395	\$ 259,602	\$ 180,378
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation and amortization	131,158	142,004	116,131
Impairment of assets sold	37,902	—	—
Net (gain) loss on sales of assets and businesses	(23,598)	1,925	(1,106)
Net (gain) on cross-currency interest rate swaps	(30,481)	—	—
Stock-based compensation	22,902	18,146	18,229
Deferred income taxes	1,311	(10,065)	(30,177)
Gain due to curtailment of postretirement plan	—	—	(330)
Changes in operating assets and liabilities:			
Trade accounts receivable	52,095	841	(6,494)
Unbilled receivables (contract assets)	(22,028)	(31,353)	—
Costs to fulfill a contract	(27,446)	(20,656)	—
Inventories	61,019	(49,185)	(7,660)
Accounts payable and accrued liabilities	(153,318)	48,004	(2,284)
Contract liabilities	25,882	29,082	(1,596)
Income taxes	(37,099)	2,083	35,641
Retirement benefit obligations	(3,777)	(3,705)	(4,653)
Other	74,574	3,885	3,213
Net cash provided by operating activities	349,491	390,608	299,292
Cash flows from investing activities:			
Payments for purchase of property, plant, and equipment	(47,087)	(99,066)	(127,140)
Proceeds from sale of assets	30,173	1,010	1,923
Proceeds from business divestiture	10,443	—	—
Proceeds from sales of short-term investments	12,700	22,252	9,088
Payments for purchases of short-term investments	(13,109)	(26,723)	(9,323)
Business acquisitions, net of cash acquired	—	—	(771,115)
Net cash (used in) investing activities	(6,880)	(102,527)	(896,567)
Cash flows from financing activities:			
Cash dividends paid	(37,664)	(39,066)	(34,003)
Proceeds from sales of treasury stock	24,969	36,044	9,132
Payments for repurchases of common stock	(13,346)	(110,311)	—
Borrowings on revolving lines of credit and short-term borrowings	1,248,135	1,683,542	1,930,261
Payments on revolving lines of credit and short-term borrowings	(1,510,746)	(1,690,035)	(1,691,934)
Proceeds from issuance of long-term debt	—	—	400,000
Payments of long-term debt and finance lease obligations	(1,590)	(143,535)	(421)
Payments for debt financing costs	—	(2,238)	(1,494)
Payments for forward option derivative instrument	—	—	(5,543)
Net cash (used in) provided by financing activities	(290,242)	(265,599)	605,998
Effect of exchange rate changes on cash and cash equivalents	1,828	(7,003)	(12,681)
Net change in cash and cash equivalents	54,197	15,479	(3,958)
Cash and cash equivalents, including restricted cash, at beginning of year	99,073	83,594	87,552
Cash and cash equivalents, including restricted cash, at end of period	<u>\$ 153,270</u>	<u>\$ 99,073</u>	<u>\$ 83,594</u>

See accompanying Notes to Consolidated Financial Statements

WOODWARD, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands, except per share amounts)

	Number of shares		Accumulated other comprehensive (loss) earnings										Stockholders' equity		
	Common stock	Treasury stock	Treasury stock held for deferred compensation	Common stock	Additional paid-in capital	Foreign currency translation adjustments	Unrealized derivative gains (losses)	Minimum benefit liability adjustments	Total other comprehensive earnings (loss)	Deferred compensation	Retained earnings	Treasury stock at cost	Treasury stock held for deferred compensation	Total stockholders' equity	
Balances as of September 30, 2017	72,960	(11,739)	(186)	\$ 163,836	\$ (27,280)	\$ 135	\$ (26,041)	\$ (53,186)	\$ 7,135	\$ 180,378	\$ (539,641)	\$ (7,135)	\$ 1,371,383		
Net earnings	—	—	—	—	—	(12,514)	(21,077)	11,835	(21,756)	—	—	—	180,378		
Other comprehensive income (loss), net of tax	—	—	—	—	—	—	—	—	—	(34,003)	—	—	(21,756)		
Cash dividends paid (\$0.5525 per share)	—	—	—	—	(3,517)	—	—	—	—	—	—	—	(34,003)		
Sales of treasury stock	—	334	—	—	7,157	—	—	—	—	—	12,649	—	9,132		
Common shares issued from treasury stock for benefit plans	—	202	—	—	18,229	—	—	—	—	—	7,584	—	14,741		
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	18,229		
Purchases and transfers of stock by/to deferred compensation plan	—	—	(17)	—	—	—	—	—	—	—	—	—	(1,318)		
Distribution of stock from deferred compensation plan	—	—	1	—	—	—	—	—	(22)	—	—	—	22		
Balances as of September 30, 2018	72,960	(11,203)	(202)	\$ 185,705	\$ (39,794)	\$ (20,942)	\$ (14,206)	\$ (74,942)	\$ 8,431	\$ 1,966,643	\$ (539,408)	\$ (8,431)	\$ 1,538,104		
Balances as of September 30, 2018	72,960	(11,203)	(202)	\$ 185,705	\$ (39,794)	\$ (20,942)	\$ (14,206)	\$ (74,942)	\$ 8,431	\$ 1,966,643	\$ (539,408)	\$ (8,431)	\$ 1,538,104		
Cumulative effect from adoption of ASC 606	—	—	—	—	—	(45)	—	—	(45)	—	—	—	(1,005)		
Net earnings	—	—	—	—	—	(13,396)	15,987	(30,910)	(28,319)	—	—	—	(39,066)		
Other comprehensive earnings (loss), net of tax	—	—	—	—	—	—	—	—	—	—	—	—	(110,311)		
Cash dividends paid (\$0.6300 per share)	—	—	—	—	(5,904)	—	—	—	—	—	—	—	41,948		
Purchases of treasury stock	—	(1,102)	—	—	9,173	—	—	—	—	—	5,673	—	14,846		
Common shares issued from treasury stock for benefit plans	—	158	—	—	18,146	—	—	—	—	—	—	—	18,146		
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	(1,193)		
Purchases and transfers of stock by/to deferred compensation plan	—	—	(14)	—	—	—	—	—	—	—	—	—	242		
Distribution of stock from deferred compensation plan	—	—	5	—	—	—	—	—	(242)	—	—	—	—		
Balances as of September 30, 2019	72,960	(11,040)	(211)	\$ 207,120	\$ (53,235)	\$ (4,955)	\$ (45,116)	\$ (103,306)	\$ 9,382	\$ 2,224,919	\$ (602,098)	\$ (9,382)	\$ 1,726,741		
Balances as of September 30, 2019	72,960	(11,040)	(211)	\$ 207,120	\$ (53,235)	\$ (4,955)	\$ (45,116)	\$ (103,306)	\$ 9,382	\$ 2,224,919	\$ (602,098)	\$ (9,382)	\$ 1,726,741		
Cumulative effect from adoption of ASC 842 (Note 5)	—	—	—	—	—	—	—	—	—	255	—	—	240,395		
Net earnings	—	—	—	—	—	12,544	(15,502)	16,470	13,512	—	—	—	(37,664)		
Other comprehensive earnings (loss), net of tax	—	—	—	—	—	—	—	—	—	—	—	—	(37,664)		
Cash dividends paid (\$0.6050 per share)	—	—	—	—	(7,506)	—	—	—	—	—	—	—	(13,346)		
Purchases of treasury stock	—	(124)	—	—	9,420	—	—	—	—	—	5,328	—	25,134		
Sales of treasury stock	—	763	—	—	22,902	—	—	—	—	—	—	—	14,748		
Common shares issued from treasury stock for benefit plans	—	—	—	—	—	—	—	—	—	—	—	—	22,902		
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	(681)		
Purchases and transfers of stock by/to deferred compensation plan	—	—	(6)	—	—	—	—	—	—	—	—	—	841		
Distribution of stock from deferred compensation plan	—	—	18	—	—	—	—	—	(841)	—	—	—	—		
Balances as of September 30, 2020	72,960	(10,277)	(199)	\$ 231,936	\$ (40,691)	\$ (20,457)	\$ (28,646)	\$ (89,794)	\$ 9,222	\$ 2,427,905	\$ (577,476)	\$ (9,222)	\$ 1,992,677		

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 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, 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.

In March 2020, the World Health Organization ("WHO") declared the novel coronavirus ("COVID-19") outbreak a global pandemic. When combined with the various measures enacted by governments and private organizations to contain COVID-19 or slow its spread, the pandemic has adversely impacted global activity and contributed to significant declines and volatility in financial markets; and the Company has likewise been significantly impacted by the global COVID-19 pandemic. Despite recent promising announcements regarding various vaccines in development and their potential safety and efficacy, there can be no assurance as to whether any vaccine will in fact be safe and efficacious, or as to when any vaccines will be approved by appropriate regulatory authorities and become widely available. Thus, the COVID-19 pandemic could continue to have a material adverse impact on economic and market conditions and trigger an extended period of global economic slowdown, and the full extent of its impact on the Company's future business is currently unknown. The rapid development and fluidity of this situation precludes any prediction as to the ultimate material adverse impact of the COVID-19 pandemic, including impacts to estimates and assumptions used by management for the reported amounts of assets and liabilities. The pandemic presents uncertainty and risk with respect to the Company and its performance and financial results. See Note 17, *Accrued liabilities*, for specific restructuring actions taken by the Company related to the COVID-19 pandemic.

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 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 assets and liabilities of its domestic and foreign subsidiaries, are denominated in foreign currencies. Selling, general, and administrative expenses include a net foreign currency gain of \$194 in fiscal year 2020, a net foreign currency loss of \$1,018 in fiscal year 2019, and a net foreign currency loss of \$1,608 in fiscal year 2018.

Revenue recognition: Revenue is recognized on contracts with Woodward's customers for arrangements in which quantities and pricing are fixed and/or determinable and are generally based on customer purchase orders, often within the framework of a long-term supply arrangement with the customer. Woodward has determined that it is the principal in its sales transactions, as Woodward is primarily responsible for fulfilling the promised performance obligations, has discretion to establish the selling price, and generally assumes the inventory risk. A performance obligation is a promise in a contract with a customer to transfer a distinct product or service to the customer. Woodward recognizes revenue for performance obligations within a customer contract when control of the associated product or service is transferred to the customer. Some of Woodward's contracts with customers contain a single performance obligation, while other contracts contain multiple performance obligations. Each product within a contract generally represents a separate performance obligation as Woodward does not provide significant installation and integration services, the products do not customize each other, and the products can function independently of each other.

A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the customer obtains control of the associated product or service. When there are multiple performance obligations within a contract, Woodward generally uses the observable standalone sales price for each distinct product or service within the contract to allocate the transaction price to the distinct products or services. In instances when a standalone sales price for each product or service is not observable within the contract, Woodward allocates the transaction price to each performance obligation using an estimate of the standalone selling price for each product or service, which is generally based on incurred costs plus a reasonable margin, for each distinct product or service in the contract.

When determining the transaction price of each contract, Woodward considers contractual consideration payable by the customer and variable consideration that may affect the total transaction price. Variable consideration, consisting of early payment discounts, rebates and other sources of price variability, are included in the estimated transaction price based on both customer-specific information as well as historical experience. Woodward's contracts with customers generally do not include a financing component. Woodward regularly reviews its estimates of variable consideration on the transaction price and recognizes changes in estimates on a cumulative catch-up basis as if the most current estimate of the transaction price adjusted for variable consideration had been known as of the inception of the contract. In the fiscal years ended September 30, 2020 and 2019, Woodward did not recognize a significant amount of revenue due to changes in transaction price from performance obligations that were satisfied, or partially satisfied, in prior periods.

Customers sometimes trade in used products in exchange for new or refurbished products. In addition, Woodward's customers sometimes provide inventory to Woodward which will be integrated into final products sold to those customers. Woodward obtains control of these exchanged products and customer provided inventory, and therefore, both are forms of noncash consideration. Noncash consideration paid by customers on overall sales transactions is additive to the transaction price. Woodward's net sales and cost of goods sold include the value of such noncash consideration for the same amount, with no resulting impact to earnings before income taxes. Upon receipt of such inventory, Woodward recognizes an inventory asset and a contract liability.

Point in time and over time revenue recognition: Control of the products generally transfers to the customer at a point in time, as the customer does not control the products as they are produced. Woodward exercises judgment and considers the timing of right of payment, transfer of the risk and rewards, transfers of title, transfer of physical possession, and customer acceptance when determining when control of the product transfers to the customer, generally upon shipment of products, consistent with Woodward's historical revenue recognition model.

Performance obligations are satisfied and revenue is recognized over time if: (i) the customer receives the benefits as Woodward performs work, if the customer controls the asset as it is being enhanced, or if the product being produced for the customer has no alternative use to Woodward; and (ii) Woodward has an enforceable right to payment with a profit. For products being produced for the customer that have no alternative use to Woodward and Woodward has an enforceable right to payment with a profit, and where the products are substantially the same and have the same pattern of transfer to the customer, revenue is recognized as a series of distinct products. As Woodward satisfies MRO performance obligations, revenue is recognized over time, as the customer, rather than Woodward, controls the asset being enhanced. When services are provided, revenue from those services is recognized over time because control is transferred continuously to customers as Woodward performs the work. As a practical expedient, revenue for services that are short-term in nature are recognized using an output method as the customer is invoiced, as the invoiced amount corresponds directly to Woodward's performance to date on the arrangement.

For services that are not short-term in nature, MRO, and sales of products that have no alternative use to Woodward and an enforceable right to payment with a profit, Woodward uses an actual cost input measure to determine the extent of progress towards completion of the performance obligation. For these revenue streams, revenue is recognized over time as work is performed based on the relationship between actual costs incurred to-date for each contract and the total estimated costs for such contract at completion of the performance obligation (the cost-to-cost method). Woodward has concluded that this measure of progress best depicts the transfer of assets to the customer, because incurred costs are integral to Woodward's completion of the performance obligation under the specific customer contract and correlate directly to the transfer of control to the customer. Contract costs include labor, material and overhead. Contract cost estimates are based on various assumptions to project the outcome of future events. These assumptions include labor productivity and availability; the complexity of the work to be performed; the cost and availability of materials; the performance of subcontractors; and the availability and timing of funding from the customer. Revenues, including estimated fees or profits, are recorded proportionally as costs are incurred.

A change in one or more of these estimates could affect the timing of revenue recognition on these contracts. Woodward reviews and updates its cost estimates regularly. Due to uncertainties inherent in the estimation process, it is reasonably possible that completion costs may be different than those estimated. Such changes in cost estimates and the related impact on the revenue recognized in the period in which the revisions are determined is recorded as a cumulative catch-up adjustment. The production of products and MRO activities are generally shorter-term in nature and therefore, the impacts of changes in estimates for these costs are considered immaterial.

If at any time the estimate of contract profitability indicates an anticipated loss on the contract, Woodward recognizes provisions for estimated losses on uncompleted contracts in the period in which such losses are determined. In situations where the creditworthiness of a customer becomes in doubt, Woodward ceases to recognize the over-time revenue on the associated customer contract. Occasionally

Woodward sells maintenance or service arrangements, extended warranties, or other stand ready services. Woodward recognizes revenue from such arrangements as a series of performance obligations over the time period in which the services are available to the customer.

Material Rights and Costs to Fulfill a Contract: Customers sometimes pay consideration to Woodward for product engineering and development activities that do not result in the immediate transfer of distinct products or services to the customer. There is an implicit assumption that without the customer making such advance payments to Woodward, Woodward's future sales of products or services to the customer would be at a higher selling price; therefore, such payments create a "material right" to the customer that effectively gives the customer an option to acquire future products or services, at a discount, that are dependent upon the product engineering and development. Material rights are recorded as contract liabilities and will be recognized when control of the related products or services are transferred to the customer.

Woodward capitalizes costs of product engineering and development identified as material rights up to the amount of customer funding as costs to fulfill a contract because the costs incurred up to the amount of the customer funding commitment are recoverable. Due to the uncertainty of the product success and/or demand, fulfillment costs in excess of the customer funding are expensed as incurred. Woodward recognizes the deferred material rights as revenue based on a percentage of actual sales to total estimated lifetime sales of the related developed products as the customers exercise their option to acquire additional products or services at a discount. Woodward amortizes the capitalized costs to fulfill a contract as cost of goods sold proportionally to the recognition of the associated deferred material rights. Estimated total lifetime sales are reviewed at least annually and more frequently when circumstances warrant a modification to the previous estimate.

Woodward does not record incremental costs of obtaining a contract, as Woodward does not pay sales commissions or incur other incremental costs related to contracts with Woodward's customers for arrangements in which quantities and pricing are fixed and/or determinable.

Contract liabilities: Advance payments and billings in excess of revenue recognized represent contract liabilities and are recorded as deferred revenues when customers remit contractual cash payments in advance of Woodward satisfying performance obligations under contractual arrangements, including those with performance obligations satisfied over time. Woodward generally receives advance payments from customers related to maintenance or service arrangements, extended warranties, or other stand ready services, which it recognizes over the performance period. Contract liabilities are derecognized when revenue is recognized and the performance obligation is satisfied. Advance payments and billings in excess of revenue recognized are included in deferred revenue, which is classified as current or noncurrent based on the timing of when Woodward expects to recognize revenue.

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”) 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 subsidiaries accept bankers’ acceptance notes from Chinese customers in settlement of certain customer billed 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 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. Woodward has elected to adopt the practical expedient to not adjust the promised amounts of consideration for the effects of a significant financing component at contract inception as the financing component associated with accepting bankers’ acceptance notes has a duration of less than one year. Woodward’s contracts with customers generally have no other financing components.

Unbilled receivables (contract assets) arise when the timing of billing differs from the timing of revenue recognized, such as when contract provisions require revenue to be recognized over time rather than at a point in time. Unbilled receivables primarily relate to performance obligations satisfied over time when the cost-to-cost method is utilized and the revenue recognized exceeds the amount billed to the customer as there is not yet a right to payment in accordance with contractual terms. Unbilled receivables are recorded as a contract asset when the revenue associated with the contract is recognized prior to billing and derecognized when billed in accordance with the terms of the contract.

For composition of accounts receivable, see Note 3, *Revenue*.

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, 2020 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 years 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 indicates the fair value of a reporting unit may be 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 test consists 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.

In the first quarter of fiscal year 2020, Woodward determined that the approved plan to divest of the renewable power systems business and other related businesses (as described more fully in Note 11, *Sale of businesses*, and defined therein as the “disposal group”) represented a triggering event requiring the long-lived assets attributable to the disposal group be assessed for impairment. Given the facts and circumstances at the time, Woodward determined that the remaining value of the goodwill of the disposal group was not recoverable and an \$8,640 non-cash impairment charge was recorded during the year ended September 30, 2020.

Based on the results of Woodward’s annual goodwill impairment testing, no additional impairment charges were recorded in the year ended September 30, 2020 or since the goodwill was originally recorded due to the annual goodwill impairment test.

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.

Based on Woodward’s plan to divest the disposal group, Woodward determined that the remaining value of the intangible assets of the disposal group was not recoverable, and a \$200 non-cash impairment charge was recorded for the year ended September 30, 2020.

Woodward has recorded no additional impairment charges related to its other intangibles as of September 30, 2020 or since the other intangibles were originally recorded due to the annual goodwill impairment test.

Estimated lives over which intangible assets are amortized at September 30, 2020 were as follows:

Customer relationships and contracts	9	–	30	years
Intellectual property	10	–	17	years
Process technology	8	–	30	years
Other	3	–	15	years

Woodward has one other indefinitely lived intangible asset consisting of the Woodward L’Orange tradename. The Woodward L’Orange tradename intangible asset is tested for impairment on an annual basis and more often if an event occurs or circumstances change that indicate the fair value of the Woodward L’Orange intangible asset may be below its carrying amount. The impairment test consists of comparing the fair value of the Woodward L’Orange tradename intangible asset, determined using discounted cash flows, with its carrying amount. If the carrying amount of the Woodward L’Orange intangible asset exceeds its fair value, an impairment loss would be recognized to reduce the carrying amount to its fair value. Woodward has not recorded any impairment charges.

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.

On the approval of the divestiture plan and subsequent marketing of the disposal group (as described more fully in Note 11, *Sale of businesses*, and defined therein as the “disposal group”), Woodward determined that based on the current market conditions, the carrying value of the disposal group’s remaining held for sale net assets exceeded the fair value. As a result, Woodward recorded a non-cash impairment charge associated with the long-lived assets of \$22,900 attributable to the disposal group for the year ended September 30, 2020.

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 Sheets 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 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 only with 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.

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 Consolidated Balance Sheets 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 9, *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 is 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 is 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 8, *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 FASB Accounting Standards Codification (“ASC”) are communicated through issuance of an Accounting Standards Update (“ASU”).

In March 2020, the FASB issued ASU 2020-04, “Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting.” The purpose of ASU 2020-04 is to provide optional guidance for a limited time to ease the potential burden in accounting for, or recognizing the effects of, reference rate reform on financial reporting. In response to concerns about structural risks of interbank offered rates, and, in particular, the risk of cessation of the London Interbank Offered Rate (LIBOR), reference rate reform refers to a global initiative to identify alternative reference rates that are more observable or transaction-based and less susceptible to manipulation. ASU 2020-04 is effective for all entities as of March 12, 2020 through December 31, 2022. An entity may elect to apply the amendments in ASU 2020-04 for contract modifications by topic or industry subtopic as of any date from the beginning of an interim period that includes or is subsequent to March 12, 2020, or prospectively from a date within an interim period that includes or is subsequent to March 12, 2020, up to the date that the financial statements are available to be issued. Once elected for a topic or an industry subtopic, the amendments in ASU 2020-04 must be applied prospectively for all eligible contract modifications for that topic or industry subtopic.

An entity may elect to apply the amendments in ASU 2020-04 to eligible hedging relationships existing as of the beginning of the interim period that includes March 12, 2020 and to new eligible hedging relationships entered into after the beginning of the interim period that includes March 12, 2020. If an entity elects to apply any of the amendments for an eligible hedging relationship existing as of the beginning of the interim period that includes March 12, 2020, any adjustments as a result of those elections must be reflected as of the beginning of that interim period and recognized in accordance with the guidance in reference rate reform subtopics 848-30, 848-40, and 848-50 (as applicable). If an entity elects to apply any of the amendments for a new hedging relationship entered into between the beginning of the interim period that includes March 12, 2020, any adjustments as a result of those elections must be reflected as of the beginning of the hedging relationship and recognized in accordance with the guidance in reference rate reform subtopics 848-30, 848-40, and 848-50 (as applicable).

Woodward is currently assessing the accounting and financial impact of reference rate reform, particularly the impact it may have on its hedging relationships and will consider applying the optional guidance of ASU 2020-04 accordingly.

In December 2019, the FASB issued ASU 2019-12, “Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes.” ASU 2019-12 amends ASC 740 to simplify the accounting for income taxes by removing certain exceptions for investments, intraperiod allocations and interim calculations, and adding guidance to reduce complexity in the accounting standard under the FASB’s simplification initiative. ASU 2019-12 is effective for public entities for fiscal years beginning after December 15, 2020 (fiscal year 2022 for Woodward). Upon adoption, the amendments in ASU 2019-12 should be applied on a prospective basis to all periods presented. Early adoption is permitted. Woodward is currently assessing the impact of the adoption of the new guidance under ASU 2019-12 and expects to adopt it in fiscal year 2022.

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 Plans.” 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 ending after December 15, 2020 (fiscal year 2022 for Woodward). Upon adoption, the amendments in ASU 2018-14 should be applied on a retrospective basis to all periods presented and early adoption is permitted. Woodward elected to early adopt the new guidance as of September 30, 2020. Adoption of ASU 2018-14 resulted in elimination of the following disclosures (a) the amounts expected to be amortized from accumulated other comprehensive income and reported as a component of net periodic benefit cost during the following fiscal year, and (b) the effects of a one-percentage-point change in the assumed health care cost trend rates on the aggregate projected service and interest cost and accumulated postretirement benefit obligation; and additional disclosures explaining the reasons for significant gains and losses related to the change in benefit obligations for the period. See Note 21, *Retirement benefits*, for further discussion of the Company’s defined benefit pension plans.

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 (“OCI”) to retained earnings for stranded tax effects resulting from the enactment of tax reform under 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”) (also known as “The Tax Cuts and Jobs Act”), and provides guidance on the disclosure requirements regarding the stranded tax effects. Woodward adopted ASU 2018-02 on October 1, 2019 and has elected not to reclassify the income tax effects of the Tax Act from accumulated OCI to retained earnings.

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. 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 adopted the new guidance on October 1, 2018. Modified retrospective adoption is required with any cumulative-effect adjustment recorded to retained earnings as of the beginning of the period of adoption. The cumulative impact of the adoption of ASU 2016-16 of \$1,005 was recognized at the date of adoption as a decrease to both retained earnings and other current assets in the Consolidated Balance Sheet. As a result of adoption, 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.

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 expects to elect the modified retrospective adoption method resulting in a cumulative-effect adjustment to retained earnings on October 1, 2020.

Woodward is currently assessing the impact this guidance will have on its Consolidated Financial Statements, including how Woodward’s existing accounts receivable, unbilled receivables (contract assets), and other financial assets will be impacted by the new guidance. In anticipation of adopting ASU 2016-13 on October 1, 2020, Woodward has developed a comprehensive project plan to assess the current credit loss allowance methods and the associated impact on the Company. The project plan includes reviewing various financial assets for potential expected credit losses under the CECL impairment model and updating Woodward’s business processes and controls to meet the requirements of ASU 2016-13, as necessary. Woodward expects the most significant effects of the adoption of ASU 2016-13 will be changes to the accounting for the Company’s expected credit loss reserve on billed receivables and unbilled receivables (contract assets). Bad debt expense for all trade accounts receivable in fiscal year 2020 was \$884. As of September 30, 2020, and 2019, the allowance for uncollectible accounts receivable was \$6,889 and \$7,908, respectively.

In May 2019, the FASB issued ASU 2019-05, “Financial Instruments – Credit Losses (Topic 326): Targeted Transition Relief,” which provides transition relief for entities adopting ASU 2016-13. Specifically, ASU 2019-05 amends ASU 2016-13 to allow companies to irrevocably elect, upon adoption of ASU 2016-13, the fair value option for financial instruments. For entities that have adopted ASU 2016-13, the amendments in ASU 2019-05 are effective for fiscal years beginning after December 15, 2019, including interim periods therein. Woodward expects to adopt ASU 2019-05 in fiscal year 2021. Woodward does not expect to elect the fair value option for its financial instruments upon the adoption of both ASU 2016-13 and ASU 2019-05.

In February 2016, the FASB issued ASU 2016-02, “Leases (Topic 842)” and has subsequently issued supplemental and/or clarifying ASUs (collectively “ASC 842”). The purpose of ASC 842 is to increase transparency and comparability among organizations by recognizing lease right-of-use (“ROU”) assets and lease liabilities for substantially all leases on the balance sheet, and provide additional disclosure information about leasing arrangements. ASC 842 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.

Woodward adopted ASC 842 on October 1, 2019 using the modified retrospective transition method under which prior periods were not restated and the cumulative effect of initial adoption was recognized in retained earnings on the date of initial application, October 1, 2019. Consequently, financial information will not be updated and the disclosures required under ASC 842 will not be provided for dates and periods before October 1, 2019.

The new guidance under ASC 842 provides a number of optional practical expedients in transition. Woodward elected the "package of practical expedients," which allowed Woodward not to reassess under the new guidance our prior conclusions about lease identification, lease classification and initial direct costs. Accordingly, Woodward carried forward its existing conclusions on lease classification for leases existing as of the adoption date. Additionally, embedded lease arrangements were assessed under the prior guidance of ASC 840 lease framework for transition on October 1, 2019 in accordance with the leases policy outlined below. The new lease accounting guidance under ASC 842 has been applied for all arrangements commencing or modified on or after October 1, 2019.

Woodward also elected as a practical expedient to not record qualifying short-term leases with a term of twelve months or less (inclusive of reasonably certain renewals and termination options) at the inception of the contract on the balance sheet and instead recognizes those lease payments in the Consolidated Statements of Comprehensive Earnings on a straight-line basis over the lease term. This practical expedient may not be applied to short-term leases that contain a purchase option that is reasonably certain of exercise.

Woodward has also elected the practical expedient to not separate lease and non-lease components for its lease arrangements when it is the lessee. The application of this practical expedient is discussed at Note 5, *Leases*.

The adoption of ASC 842 resulted in recognition of additional operating ROU assets and operating lease liabilities on the Consolidated Balance Sheet as of October 1, 2019 of \$18,894 and \$18,851, respectively. See Note 5, *Leases*, for disclosures and further information related to implementation and adoption of ASC 842.

Note 3. Revenue

Sales of Products

Woodward primarily generates revenue through the manufacture and sale of engineered aerospace and industrial products, including revenue derived from maintenance, repair and overhaul (“MRO”) performance obligations performed on products originally manufactured by Woodward and subsequently returned by original equipment manufacturer (“OEM”) or other end-user customers. The majority of Woodward’s costs incurred to satisfy MRO performance obligations are related to replacing and/or refurbishing component parts of the returned products to restore the units back to a condition generally comparable to that of the unit upon its initial sale to an OEM customer. Therefore, Woodward considers almost all of its revenue to be derived from product sales, including those related to MRO.

Revenue from manufactured products, MRO, and services represented 86%, 12%, and 2%, respectively, of Woodward’s net sales for the years ended September 30, 2020 and September 30, 2019.

Point in time and over time revenue recognition

The amount of revenue recognized as point in time or over time follows:

	<u>For the Year Ended September 30, 2020</u>			<u>For the Year Ended September 30, 2019</u>		
	<u>Aerospace</u>	<u>Industrial</u>	<u>Consolidated</u>	<u>Aerospace</u>	<u>Industrial</u>	<u>Consolidated</u>
Point in time	\$ 590,817	\$ 592,157	\$ 1,182,974	\$ 762,042	\$ 634,219	\$ 1,396,261
Over time	1,000,146	312,545	1,312,691	1,118,478	385,458	1,503,936
Total net sales	<u>\$ 1,590,963</u>	<u>\$ 904,702</u>	<u>\$ 2,495,665</u>	<u>\$ 1,880,520</u>	<u>\$ 1,019,677</u>	<u>\$ 2,900,197</u>

Material Rights and Costs to Fulfill a Contract

For the fiscal years ended September 30, 2020 and September 30, 2019, Woodward recognized an increase in revenue of \$6,784 and \$6,017, respectively, and cost of goods sold of \$6,638 and \$9,580, respectively, related to changes in estimated total lifetime sales. Other than amounts related to changes in estimate, for the fiscal years ended September 30, 2020 and September 30, 2019, Woodward amortized \$1,241 and \$376, respectively, of costs to fulfill contracts with customers to cost of goods sold and amortized \$1,664 and \$719, respectively, of contract liabilities to revenue. As of September 30, 2020, other assets included \$133,349 of capitalized costs to fulfill contracts with customers, compared to \$105,206 as of September 30, 2019.

Accounts Receivable and Contract assets

Customer receivables include amounts billed and currently due from customers as well as unbilled amounts (contract assets) and are included in “Accounts receivable” in Woodward’s Consolidated Balance Sheets. Amounts are billed in accordance with contractual terms, which are generally tied to shipment of the products to the customer, or as work progresses in accordance with contractual terms. Billed accounts receivable are typically due within 60 days. Woodward’s contracts with customers generally have no financing components.

Accounts receivable consisted of the following:

	September 30, 2020	September 30, 2019
Billed receivables		
Trade accounts receivable	\$ 307,914	\$ 381,942
Other (Chinese financial institutions)	56,640	42,171
Less: Allowance for uncollectible amounts	(6,889)	(7,908)
Net billed receivables	<u>357,665</u>	<u>416,205</u>
Current unbilled receivables (contract assets), net	<u>180,322</u>	<u>175,324</u>
Total accounts receivable, net	<u>\$ 537,987</u>	<u>\$ 591,529</u>

As of September 30, 2020, “Other assets” on the Consolidated Balance Sheets includes \$16,751 of unbilled receivables not expected to be invoiced and collected within a period of twelve months, compared to \$1,573 as of September 30, 2019. Unbilled receivables not expected to be invoiced and collected within a period of twelve months are primarily attributable to customer delays for deliveries on firm orders in the Aerospace segment due to the impacts of the COVID-19 pandemic.

Billed and unbilled accounts receivable from the U.S. Government were less than 10% of total billed and unbilled accounts receivable at September 30, 2020 and September 30, 2019.

Contract liabilities

Contract liabilities consisted of the following:

	September 30, 2020		September 30, 2019	
	Current	Noncurrent	Current	Noncurrent
Deferred revenue from material rights from GE joint venture formation	\$ 4,066	\$ 234,240	\$ 8,317	\$ 230,588
Deferred revenue from advanced invoicing and/or prepayments from customers	3,239	85	4,554	141
Liability related to customer supplied inventory	14,955	—	13,396	—
Deferred revenue from material rights related to engineering and development funding	2,360	132,317	1,624	106,436
Net contract liabilities	<u>\$ 24,620</u>	<u>\$ 366,642</u>	<u>\$ 27,891</u>	<u>\$ 337,165</u>

The current portion of contract liabilities is included in “Accrued liabilities” and the noncurrent portion is included in “Other liabilities” of Woodward’s Consolidated Balance Sheets. Woodward recognized revenue of \$29,579 in the year ended September 30, 2020 from contract liabilities balances recorded as of September 30, 2019, compared to \$21,658 in the year ended September 30, 2019 from contract liabilities balances recorded as of October 1, 2018.

Woodward recognized revenue of \$79,569 for the fiscal year 2020, compared to \$98,061 for the fiscal year 2019 related to noncash consideration received from customers. The Aerospace segment recognized \$78,179 for the fiscal year ended September 30, 2020, compared to \$96,762 for the fiscal year ended September 30, 2019, while the Industrial segment recognized \$1,390 for the fiscal year ended September 30, 2020 compared to \$1,299 for the fiscal year ended September 30, 2019.

Remaining performance obligations

Remaining performance obligations related to the aggregate amount of the total contract transaction price of firm orders for which the performance obligation has not yet been recognized in revenue as of September 30, 2020 was \$1,454,406, compared to \$1,527,437 as of September 30, 2019, the majority of which in both periods relate to Woodward's Aerospace segment. Woodward expects to recognize almost all of these remaining performance obligations within two years after September 30, 2020.

Remaining performance obligations related to material rights that have not yet been recognized in revenue as of September 30, 2020 was \$465,668, of which \$6,983 is expected to be recognized in fiscal year 2021, and the balance is expected to be recognized thereafter. Woodward expects to recognize revenue from performance obligations related to material rights over the life of the underlying programs, which may be as long as forty years.

Disaggregation of Revenue

Woodward designs, produces and services reliable, efficient, low-emission, and high-performance energy control products for diverse applications in markets throughout the world. Woodward reports financial results for each of its Aerospace and Industrial reportable segments. Woodward further disaggregates its revenue from contracts with customers by primary market and by geographical area as Woodward believes this best depicts how the nature, amount, timing and uncertainty of its revenue and cash flows are affected by economic factors.

Revenue by primary market for the Aerospace reportable segment was as follows:

	Year Ended September 30,	
	2020	2019
Commercial OEM	434,306	659,336
Commercial aftermarket	399,843	497,795
Defense OEM	526,264	529,940
Defense aftermarket	230,550	193,449
Total Aerospace segment net sales	<u>\$ 1,590,963</u>	<u>\$ 1,880,520</u>

Revenue by primary market for the Industrial reportable segment was as follows:

	Year Ended September 30,	
	2020	2019
Reciprocating engines	\$ 632,555	\$ 751,136
Industrial turbines	222,366	210,064
Renewables ¹	49,781	58,477
Total Industrial segment net sales	<u>\$ 904,702</u>	<u>\$ 1,019,677</u>

(1) Sales in the renewables market were discontinued as of May 1, 2020 following the closing of the divestiture of the disposal group (see Note 11, *Sale of businesses*).

The customers who account for approximately 10% or more of net sales of each of Woodward's reportable segments for the fiscal year ended September 30, 2020 are as follows:

	Customer
Aerospace	The Boeing Company, General Electric Company, Raytheon Technologies
Industrial	Rolls-Royce PLC, Weichai Westport, General Electric Company

Net sales by geographic area, as determined based on the location of the customer, were as follows:

	Year Ended September 30, 2020			Year Ended September 30, 2019		
	Aerospace	Industrial	Consolidated	Aerospace	Industrial	Consolidated
United States	\$ 1,231,004	\$ 195,450	\$ 1,426,454	\$ 1,415,880	\$ 212,184	\$ 1,628,064
Germany	52,635	181,330	233,965	72,907	229,177	302,084
Europe, excluding Germany	122,938	214,033	336,971	178,905	252,511	431,416
China	38,359	171,526	209,885	47,492	167,337	214,829
Asia, excluding China	27,068	113,001	140,069	37,991	126,497	164,488
Other countries	118,959	29,362	148,321	127,345	31,971	159,316
Total net sales	<u>\$ 1,590,963</u>	<u>\$ 904,702</u>	<u>\$ 2,495,665</u>	<u>\$ 1,880,520</u>	<u>\$ 1,019,677</u>	<u>\$ 2,900,197</u>

Note 4. 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,		
	2020	2019	2018
Numerator:			
Net earnings	\$ 240,395	\$ 259,602	\$ 180,378
Denominator:			
Basic shares outstanding	62,267	61,950	61,493
Dilutive effect of stock options and restricted stock units	1,942	2,548	2,383
Diluted shares outstanding	<u>64,209</u>	<u>64,498</u>	<u>63,876</u>
Income per common share:			
Basic earnings per share	\$ 3.86	\$ 4.19	\$ 2.93
Diluted earnings per share	<u>\$ 3.74</u>	<u>\$ 4.02</u>	<u>\$ 2.82</u>

The following stock option grants were outstanding during the fiscal years ended September 30, 2020, 2019 and 2018, but were excluded from the computation of diluted earnings per share because their inclusion would have been anti-dilutive.

	Year Ended September 30,		
	2020	2019	2018
Options	660	25	760
Weighted-average option price	<u>\$ 104.45</u>	<u>\$ 96.54</u>	<u>\$ 78.72</u>

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,		
	2020	2019	2018
Weighted-average treasury stock shares held for deferred compensation obligations	211	208	198

Note 5. Leases

Woodward adopted ASC 842 on October 1, 2019 using the modified retrospective transition method under which prior periods were not restated and the cumulative effect of initial adoption was recognized in retained earnings on the date of initial application, October 1, 2019.

Woodward is primarily a lessee in lease arrangements but has some embedded lessor arrangements.

Lessee arrangements

Woodward has entered into operating leases for certain facilities and equipment with terms in excess of one year under agreements that expire at various dates. Some leases require the payment of property taxes, insurance, maintenance costs, or other similar costs in addition to rental payments. Woodward has also entered into finance leases for equipment with terms in excess of one year under agreements that expire at various dates.

Woodward determines if an arrangement for the use of property, plant and equipment is a lease at inception. Under ASC 842, an arrangement contains a lease if the arrangement conveys the right to control the use of plant, property or equipment (identified asset) for a period of time in exchange for consideration. For arrangements determined to be a lease under this criteria, Woodward assesses lease classification as either an operating or finance lease whenever the new lease is executed or an existing lease requires reclassification based on changes in the lease's terms and conditions. Lease classification impacts the treatment of the lease on the income statement and amortization of the lease ROU asset. In determining lease classification, Woodward considers both qualitative and quantitative factors when performing the following classification tests: (i) transfer of ownership at the end of the lease term, (ii) existence of a bargain purchase option, (iii) the lease term, (iv) minimum lease payments, and (v) whether the leased asset is so customized to Woodward's needs as to effectively have utility only to Woodward.

Woodward applies the following thresholds when performing the classification tests: (i) 75% or greater is considered to be the majority of the asset's remaining economic life, (ii) the exercise of the renewal option or the non-exercise of a termination option is reasonably certain if it has at least a 75% likelihood of occurring (in arriving at the percentage likelihood, Woodward considers its plans as to whether to renew the lease and the economic factors that may impact the decision to renew and Woodward will include a renewal option or non-exercise of a termination option in the lease term only if the Company has an economic incentive to extend the lease), and (iii) the present value of the future minimum lease payments is considered to exceed substantially all of the fair value of the underlying asset if the payments exceed 90% of the asset's fair value. Woodward considers the exercise of the option to purchase a leased asset as reasonably certain if it has at least a 75% likelihood of being exercised or, among other things, a significant economic incentive exists for exercising the option.

Lease components are elements of an arrangement that provide the customer with the right to use an identified asset. The right to use an underlying asset is a separate lease component if: (i) the lessee can benefit from the right to use the underlying asset either on its own or together with other resources that are readily available, and (ii) the right to use the underlying asset is neither highly dependent on nor highly interrelated with other rights to use other underlying assets in the arrangement. Woodward may enter into lessee arrangements that contain a lease component but also contain other non-lease components. When the non-lease component in an arrangement relates to inventory, as inventory is outside the scope of ASC 842, the payment Woodward makes for inventory is accounted for and expensed separately and apart from lease expense, rather than as a lease component. For all other classes of underlying assets in lessee arrangements, Woodward has elected to combine lease and non-lease components and to account for them as lease expense.

ROU assets represent Woodward's right to use an underlying asset for the lease term, and lease liabilities represent Woodward's obligation to make lease payments arising from the lease. ROU assets include any initial direct costs (incremental costs of a lease that would not have been incurred had the lease not been executed) and lease prepayments made, and are reduced by any lease incentives received. Leases with an initial term of 12 months or less and leases with only variable lease payments are not recorded on the balance sheet.

ROU assets and lease liabilities are recognized at the lease commencement date based on the estimated present value of the remaining fixed lease payments over the lease term. In determining the estimated present value of lease payments, Woodward discounts the fixed lease payments using the rate implicit in the agreement or, if the implicit rate is not known, using the incremental borrowing rate. As of September 30, 2020, none of Woodward's leases have been discounted using the implicit rate as it could not be readily determined. Woodward's incremental borrowing rate is based on the information available at the lease commencement date, with consideration given to Woodward's recent debt issuances as well as publicly available data for instruments with similar characteristics.

When measuring lease liabilities, Woodward only uses lease payments remaining throughout the remainder of the lease term and only includes the amount that is probable of being owed under significant residual value guarantees, if any. Lease liabilities are subject to the same considerations as Woodward's debt instruments in classifying them as current or noncurrent in the Consolidated Balance Sheets.

For operating leases, lease expense is recognized over the expected lease term and classified as a cost of goods sold or selling, general and administrative expense based on the nature of the underlying leased asset. For finance leases, the ROU asset is recognized over the shorter of the useful life of the asset, consistent with Woodward's normal depreciation policy, or the lease term, and is classified as a cost of goods sold, selling, general and administrative expense, or research and development expense, based on the nature and use of the underlying leased asset. Interest expense is recorded in connection with the finance lease liability using the effective interest rate method and is classified as interest expense.

Certain of Woodward's operating lease agreements include variable payments that are passed through by the landlord, such as insurance, taxes, and common area maintenance, payments based on the usage of the asset, and rental payments adjusted periodically for inflation. Pass-through charges, payments due to changes in usage of the asset, and payments due to changes in indexation are included within variable rent expense and are recognized in the period in which the variable obligation for the payments was incurred.

None of Woodward's lease agreements contain significant residual value guarantees, restrictions, or covenants. As of September 30, 2020, Woodward has not entered into any lease arrangements that have not yet commenced but would create significant rights and obligations. Woodward does not have any lease transactions between related parties.

Lease-related assets and liabilities follows:

	<u>Classification on the Condensed Consolidated Balance Sheets</u>	<u>September 30, 2020</u>
Assets:		
Operating lease assets	Other assets	\$ 18,918
Finance lease assets	Property, plant and equipment, net	1,201
Total lease assets		<u>20,119</u>
Current liabilities:		
Operating lease liabilities	Accrued liabilities	4,925
Finance lease liabilities	Current portion of long-term debt	1,634
Noncurrent liabilities:		
Operating lease liabilities	Other liabilities	14,569
Finance lease liabilities	Long-term debt, less current portion	1,173
Total lease liabilities		<u>\$ 22,301</u>

In the first quarter of fiscal year 2020, Woodward determined that the approved plan to divest of the renewable power systems business and other related businesses (as described more fully in Note 11, *Sale of businesses*, and defined therein as the "disposal group") represented a triggering event requiring the long-lived assets attributable to the disposal group be assessed for impairment. Given the facts and circumstances at that time, Woodward determined that the remaining value of the ROU assets of the disposal group were not recoverable, and a \$639 non-cash impairment charge was recorded during the fiscal year ended September 30, 2020.

Supplemental lease-related information follows:

	<u>September 30, 2020</u>
Weighted average remaining lease term	
Operating leases	5.5 years
Finance leases	2.1 years
Weighted average discount rate	
Operating leases	3.2%
Finance leases	3.0%

Lease-related expenses for the fiscal year ended September 30, 2020 were as follows:

	<u>Year Ended September 30, 2020</u>
Operating lease expense	\$ 6,164
Amortization of financing lease assets	476
Interest on financing lease liabilities	87
Variable lease expense	1,101
Short-term lease expense	466
Sublease income ¹	(697)
Total lease expense	<u>\$ 7,597</u>

(1) Relates to two separate subleases Woodward has entered into for a leased manufacturing building in Niles, Illinois.

Lease-related supplemental cash flow information for the fiscal year ended September 30, 2020 follows:

	Year Ended September 30, 2020
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows for operating leases	\$ 5,622
Operating cash flows for finance leases	87
Financing cash flows for finance leases	1,590
Right-of-use assets obtained in exchange for recorded lease obligations:	
Operating leases	6,501
Finance leases	1,244

Maturities of lease liabilities as of September 30, 2020 follows:

Year Ending September 30:	Operating Leases	Finance Leases
2021	5,485	1,687
2022	4,255	739
2023	3,186	325
2024	2,230	136
2025	1,939	—
Thereafter	4,232	—
Total lease payments	21,327	2,887
Less: imputed interest	(1,833)	(80)
Total lease obligations	<u>\$ 19,494</u>	<u>\$ 2,807</u>

Comparable future minimum rental payment under operating and finance leases that have initial or remaining non-cancelable lease terms in excess of one year as previously disclosed under ASC 840 as of September 30, 2019 follows:

Year Ending September 30:	Operating Leases	Finance Leases
2020 (full twelve months)	\$ 6,667	\$ 213
2021	5,119	98
2022	3,823	33
2023	2,899	3
2024	2,378	—
Thereafter	6,033	—
Total minimum lease payments under ASC 840	<u>\$ 26,919</u>	<u>\$ 347</u>

In the fiscal years ended September 30, 2019 and September 30, 2018, total rental payments charged to expense for operating leases under ASC 840 were \$7,578 and \$8,348, respectively.

Lessor arrangements

Woodward enters into various customer supply agreements, customer sales agreements, and/or product development agreements (collectively, “manufacturing contracts”) with customers to provide highly specialized products. In certain of these manufacturing contracts, the property, plant and equipment used to manufacture the products is used only for the benefit of one customer. This is primarily driven by the demand for customer products, which can be so great that it is economically beneficial to dedicate the plant and equipment to just one customer. Additionally, this can be driven by the set-up of the property, plant and equipment required to produce specified product and/or the specialized nature of the property, plant and equipment such that it is not economically feasible to use the plant, property and equipment to manufacture other products.

Woodward has assessed its manufacturing contracts and concluded that certain of the contracts for the manufacture of customer products met the criteria to be considered a leasing arrangement (“embedded leases”) with Woodward as the lessor. The specific manufacturing contracts that met the criteria were those that utilized Woodward property, plant and equipment and which is substantially (more than 90%) dedicated to the manufacturing of the product(s) for a single customer. Woodward has dedicated manufacturing lines with three of its customers representing embedded leases, all of which qualified as operating leases with undefined quantities of future customer purchase commitments. Woodward’s customers for which embedded lessor arrangements have been identified do not have contractual long-term commitments to purchase specified quantities of related products or services from Woodward, although Woodward expects to continue selling to such customers into the future and is presently unaware of any economic penalties, or other factors, which would further define a lease term on such arrangements. Although Woodward expects to allocate some portion of future net sales to these customers to embedded lessor arrangements, it cannot provide expected future undiscounted lease payments from property, plant and equipment leased to customers as of September 30, 2020.

If in the future customers reduce purchases of related products from Woodward, the Company believes it will derive additional value from the underlying equipment by repurposing its use to support other customer arrangements. Woodward will continue to assess its future manufacturing contracts and monitor its current manufacturing contracts for changes which may trigger additional embedded leases under ASC 842.

A manufacturing contract with a customer that contains an embedded lease will generally include lease components, such as the equipment, and non-lease components, such as other inputs used in the manufacture of the customer’s product. In evaluating its embedded leases, Woodward first identified and separated its lease and non-lease components. Woodward has determined that for its current embedded leases, the property, plant and equipment used by Woodward represents lease components and all other inputs that Woodward uses to develop, manufacture and sell the customer product represents non-lease components. Woodward allocates revenue from contracts with customers between lease and non-lease components by imputing a reasonable rate of return based on the estimated fair value of the dedicated property, plant and equipment.

Under ASC 842, consistent with the previous guidance, Woodward will continue to recognize property, plant and equipment in embedded lessor arrangements on its Consolidated Balance Sheets in property, plant and equipment, net. The property, plant and equipment will continue to be depreciated as normal.

Woodward recognizes revenue from the embedded lessor arrangements based on the value of the underlying dedicated property, plant, and equipment. There are no fixed payments that the customers under the embedded lessor arrangements are obligated to pay. Therefore, all the customer payments under the embedded lessor arrangements are considered variable with the associated leasing revenue recognized when the revenue from underlying product sale related to variable lease payment is recognized. Revenue from contracts with customers that included embedded operating leases, which is included in “Net sales” at the Consolidated Statements of Earnings, was \$6,823 for the fiscal year ended September 30, 2020.

Other than the embedded leases identified, Woodward is not the lessor in any other leasing arrangements. None of the embedded leases identified by Woodward qualify as a sales-type or direct finance lease. None of the operating leases for which Woodward is the lessor include options for the lessee to purchase the underlying asset at the end of the lease term or residual value guarantees, nor are any such operating leases with related parties.

The carrying amount of property, plant and equipment leased to others through embedded leasing arrangements, included in “Property, plant and equipment, net” at the Consolidated Balance Sheets, follows:

	September 30, 2020
Property, plant and equipment leased to others through embedded leasing arrangements	\$ 76,655
Less accumulated depreciation	(29,819)
Property, plant and equipment leased to others through embedded leasing arrangements, net	<u>\$ 46,836</u>

Note 6. 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 9, *Derivative instruments and hedging activities*. The transactions contemplated by the L’Orange Agreement were completed on June 1, 2018 (the “L’Orange Closing”) and L’Orange became a subsidiary of the Company. Following the Closing, L’Orange was renamed “Woodward L’Orange.”

In connection with the Closing, MTU and a subsidiary of Rolls-Royce, and Woodward L’Orange, entered into a long-term supply agreement, dated June 1, 2018 (the “LTSA”). Pursuant to the terms of the LTSA, Woodward 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 Woodward 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 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	\$	<u>771,115</u>

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 revolving credit agreement (see Note 16, *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 Company’s revolving credit agreement (see Note 9, *Derivative instruments and hedging activities*).

The allocation of the purchase price to the assets acquired and liabilities assumed was finalized as of June 30, 2019 using the purchase method of accounting in accordance with ASC 805. Assets acquired and liabilities assumed in the transaction were recorded at their acquisition date fair values, while transaction costs associated with the acquisition were expensed as incurred. Woodward’s allocation was based on an evaluation of the appropriate fair values and represents management’s best estimate based on available data.

The following table, which is final as of June 30, 2019, summarizes the estimated fair values of the assets acquired and liabilities assumed at the Closing.

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		<u>1,020,961</u>
Other current liabilities		41,997
Deferred income tax liabilities		166,927
Other noncurrent liabilities		40,922
Total liabilities assumed		<u>249,846</u>
Net assets acquired	\$	<u>771,115</u>

- (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 noncash increase to cost of goods sold ratably over the estimated inventory turnover period during the fiscal year ended September 30, 2018.

The final purchase price allocation resulted in the recognition of \$257,447 of goodwill. Only the portion of goodwill that relates to the U.S. operations of Woodward L’Orange is 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 Woodward L’Orange with Woodward’s Industrial segment, and intangible assets that do not qualify for separate recognition, such as the value of the assembled Woodward L’Orange workforce that is not included within the estimated value of the acquired backlog and customer relationship intangible assets.

In connection with the acquisition of L’Orange, Woodward assumed the defined benefit pension obligations of the L’Orange defined benefit pension plans (the “Woodward L’Orange Pension Plans”). Woodward’s assumption of the liability associated with the Woodward L’Orange Pension Plans was part of the total consideration paid by Woodward to acquire L’Orange and thus reduced Woodward’s cash payment for the transaction. As of the Closing, the total liability recognized by the Company associated with the Woodward L’Orange Pension Plans was \$39,257, of which \$1,143 was considered current.

A 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	<u>\$ 573,427</u>		

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 Woodward L'Orange as if the acquisition had been completed as of the beginning of the fiscal year prior to the year the acquisition took place, 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 is it indicative of future results.

The unaudited pro forma financial information for the fiscal year ended September 30, 2019 includes Woodward's results, including the post-acquisition results of Woodward L'Orange, since June 1, 2018. The unaudited pro forma financial information for the fiscal year ended September 30, 2018 combines Woodward's results with the pre-acquisition results of L'Orange for the period prior to June 1, 2018, and the post-acquisition results of Woodward L'Orange since June 1, 2018.

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 fiscal years ended September 30, 2019 and September 30, 2018 were as follows:

	Year Ended September 30, 2019		Year Ended September 30, 2018	
	As reported	Pro forma	As reported	Pro forma
	Net sales	\$ 2,900,197	\$ 2,900,197	\$ 2,325,873
Net earnings	259,602	267,649	180,378	225,800
Earnings per share:				
Basic earnings per share	\$ 4.19	\$ 4.32	\$ 2.93	\$ 3.67
Diluted earnings per share	4.02	4.15	2.82	3.53

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, elimination 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.

The operating results of Woodward L'Orange have been included in Woodward's operating results for the periods subsequent to the completion of the acquisition on June 1, 2018. Woodward L'Orange contributed net sales of \$332,009 for the fiscal year ended September 30, 2019, and net sales of \$102,905 for the fiscal year ended September 30, 2018. Woodward L'Orange contributed net income before income taxes of \$47,246 for the fiscal year ended September 30, 2019, and a net loss before income taxes of \$9,334 for the fiscal year ended September 30, 2018.

Woodward incurred acquisition financing related costs of \$14,823 for the fiscal year ended September 30, 2019 as compared to \$4,904 for the fiscal year ended September 30, 2018. The acquisition financing related costs are included in "Interest expense" in the Consolidated Statements of Earnings.

Note 7. 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.

Unamortized deferred revenue from material rights in connection with the JV formation included:

	September 30, 2020	September 30, 2019
Accrued liabilities	\$ 4,066	\$ 8,317
Other liabilities	234,240	230,588

Amortization of the deferred revenue (material right) recognized as an increase to sales was \$5,493 for the fiscal year ended September 30, 2020, \$7,652 for the fiscal year ended September 30, 2019, and \$5,854 for the fiscal year ended September 30, 2018.

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. In addition, GE will continue to pay contingent consideration to Woodward consisting of fifteen annual payments of \$4,894 each, which began on January 4, 2017, subject to certain claw-back conditions. Woodward received its third and fourth annual payments of \$4,894 during the three-months ended March 31, 2019 and March 31, 2020, respectively, which were recorded as deferred income and included in Net cash provided by operating activities on the Consolidated Statements of Cash Flows. Neither Woodward nor GE contributed any tangible assets to the JV.

Other income related to Woodward’s equity interest in the earnings of the JV was as follows:

	For the Year Ended September 30,		
	2020	2019	2018
Other income	\$ 15,580	\$ 12,932	\$ 3,339

Cash distributions to Woodward from the JV, recognized in Net cash provided by operating activities on the Consolidated Statements of Cash Flows, from the JV include:

	Year Ended September 30,		
	2020	2019	2018
Cash distributions	\$ 14,000	\$ 15,000	\$ —

Net sales to the JV were as follows:

	For the Year Ended September 30,		
	2020	2019	2018
Net sales ¹	\$ 48,222	\$ 60,955	\$ 72,511

- (1) Net sales include a reduction of \$23,904 for the fiscal year ended September 30, 2020, \$34,236 for the fiscal year ended September 30, 2019, and \$26,023 for the fiscal year ended September 30, 2018 related to royalties owed to the JV by Woodward on sales by Woodward directly to third party aftermarket customers.

The Consolidated Balance Sheets include “Accounts receivable” related to amounts the JV owed Woodward, “Accounts payable” related to amounts Woodward owed the JV, and “Other assets” related to Woodward’s net investment in the JV, as follows:

	September 30, 2020	September 30, 2019
Accounts receivable	\$ 3,062	\$ 5,906
Accounts payable	1,502	4,270
Other assets	9,123	7,543

Woodward records in “Other liabilities” amounts invoiced to the JV for support of the JV’s engineering and development projects as an increase to contract liabilities, and records in “Other assets” related incurred expenditures as costs to fulfill a contract. Woodward’s contract liabilities classified as “Other liabilities” included amounts invoiced to the JV as of September 30, 2020 of \$70,618 compared to \$69,079 as of fiscal year ended September 30, 2019. Woodward’s costs to fulfill a contract included in “Other assets” related to JV activities were \$70,618 as of September 30, 2020 and \$69,079 as of fiscal year ended September 30, 2019. In the fiscal year ended September 30, 2020, Woodward recognized a \$6,609 reduction in the contract liability in “Other liabilities” and a \$6,261 reduction in costs to fulfill a contract in “Other assets” related to the termination of a JV engineering and development project previously recognized as a material right, compared to a \$2,774 reduction in the cost to fulfill a contract in “Other assets” but a reduction of \$2,790 in the contract liability in “Other liabilities” for the fiscal year ended September 30, 2019.

Note 8. Financial instruments and fair value measurements

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, 2020				At September 30, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial assets:								
Cash	\$112,817	\$ —	\$ —	\$112,817	\$ 52,971	\$ —	\$ —	\$ 52,971
Investments in reverse repurchase agreements	—	—	—	—	886	—	—	886
Investments in term deposits with foreign banks	40,453	—	—	40,453	45,216	—	—	45,216
Equity securities	25,381	—	—	25,381	20,504	—	—	20,504
Cross currency interest rate swaps	—	—	—	—	—	24,758	—	24,758
Total financial assets	<u>\$178,651</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$178,651</u>	<u>\$119,577</u>	<u>\$24,758</u>	<u>\$ —</u>	<u>\$144,335</u>
Financial liabilities:								
Cross currency interest rate swaps	\$ —	\$51,387	\$ —	\$ 51,387	\$ —	\$ —	\$ —	\$ —
Total financial liabilities	<u>\$ —</u>	<u>\$51,387</u>	<u>\$ —</u>	<u>\$ 51,387</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>

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. During the second quarter of fiscal year 2020, the Company terminated its existing investments in reverse repurchase agreements.

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.

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 (income) expense, 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 in an asset position are included in “Other assets,” and swaps in a liability position 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. As of September 30, 2020, swaps in a liability position in the amount of \$51,387 were included in “Other liabilities” in the Consolidated Balance Sheets. As of September 30, 2019, swaps in an asset position in the amount of \$24,758 were included in “Other assets” in the Consolidated Balance Sheets.

Trade 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, 2020		At September 30, 2019	
		Estimated Fair Value	Carrying Cost	Estimated Fair Value	Carrying Cost
Assets:					
Notes receivable from municipalities	2	\$ 13,413	\$ 11,846	\$ 13,100	\$ 12,346
Note receivable from sale of disposal group	2	6,341	6,061	—	—
Investments in short-term time deposits	2	13,678	13,671	13,468	13,509
Liabilities:					
Long-term debt	2	\$ 935,610	\$ 840,654	\$ 928,618	\$ 867,377

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 1.2% at September 30, 2020 and 1.7% at September 30, 2019.

In connection with the sale of the disposal group (See Note 11, *Sale of businesses*), Woodward received a long-term promissory note from the buyer for deferral of a portion of the purchase price. The fair value of the long-term note was estimated based on a model that discounted future principal and interest payments received at an interest rate available to Woodward at the end of the period for similarly rated promissory notes of similar maturity, which is a level 2 input as defined by the U.S. GAAP fair value hierarchy. The interest rate used to estimate the fair value of the long-term note was 2.3% at September 30, 2020.

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 4.4% at September 30, 2020 and 5.7% at September 30, 2019.

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 1.5% at September 30, 2020 and 2.5% at September 30, 2019.

Note 9. Derivative instruments and hedging activities

Derivative instruments not designated or qualifying as hedging instruments

In May 2018, Woodward entered into cross currency interest rate swap agreements that synthetically convert \$167,420 of floating-rate debt under Woodward's then 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 in Note 16, *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 in Note 16, *Credit facilities short-term borrowings and long-term debt*) and Woodward's then existing revolving credit agreement, respectively, is recorded as a reduction to "Interest expense" in Woodward's Consolidated Statements of Earnings.

In May 2020, as a result of the COVID-19 pandemic and uncertainties in future cash flows, Woodward terminated the Floating-Rate Cross-Currency Swap and Fixed-Rate Cross-Currency Swaps. At the date of settlement, the total notional value of the Floating-Rate Cross-Currency Swap and Fixed-Rate Cross-Currency Swaps was \$108,823 and \$400,000, respectively. Woodward received net cash proceeds of \$59,571, which includes \$58,191 related to the fair value of the derivative assets and \$4,380 of net accrued interest, less payment of \$3,000 for fees to terminate the swap agreements. The proceeds received for the fair value of the instruments is recorded in "Other", while net accrued interest is recorded in "Other" and "Accrued liabilities", respectively, in cash flows provided by operating activities of Woodward's Consolidated Statements of Cash Flows. The fees to terminate the swap agreements were expensed as incurred and presented in the line item "Selling, general and administrative" expenses in Woodward's Consolidated Statements of Earnings.

Upon termination and settlement of the instruments, Woodward entered into a new floating-rate cross-currency interest rate swap (the "2020 Floating-Rate Cross-Currency Swap"), with a notional value of \$45,000, and five fixed-rate cross-currency interest rate swap agreements (the "2020 Fixed-Rate Cross-Currency Swaps"), with an aggregate notional value of \$400,000, which effectively reduce the interest rates on the underlying fixed and floating-rate debt under the 2018 Notes and Woodward's existing revolving credit agreement, respectively. The net interest income of the cross-currency interest rate swaps is recorded as a reduction to "Interest expense" in Woodward's Consolidated Statements of Earnings. As of September 30, 2020, the total notional value of the 2020 Floating-Rate Cross-Currency Swap and 2020 Fixed-Rate Cross-Currency Swaps was \$41,250 and \$400,000, respectively. See Note 8, *Financial Instruments and fair value measurements*, for the related fair value of the derivative instruments as of September 30, 2020.

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.

In May 2020, Woodward settled the Euro denominated intercompany loan receivable with identical terms and notional value to the Floating-Rate Cross-Currency Swap and reciprocal intercompany cross-currency interest rate swap. The fair value hedge designated on these instruments was discontinued at the date of settlement and resulted in a reclassification of \$1,719 of previously unrecognized losses from accumulated OCI into earnings. The loss on discontinuation of the fair value hedging relationship is recognized in "Gain on cross-currency interest rate swaps, net" in Woodward's Condensed Consolidated Statements of Earnings.

Concurrent with settlement of the Floating-Rate Cross-Currency Swap and discontinuation of the previous fair value hedging relationship, a US dollar denominated intercompany loan payable with identical terms and notional value as the 2020 Floating-Rate Cross-Currency Swap, together with a reciprocal intercompany floating-rate cross-currency interest rate swap, was entered into by Woodward Barbados Euro Financing SRL ("Euro Barbados"), a wholly owned subsidiary of Woodward. The US dollar denominated intercompany loan and reciprocal intercompany floating-rate cross-currency interest rate swap is designated as a fair value hedge under the criteria prescribed in ASC 815. The objective of the derivative instrument is to hedge against the foreign currency exchange risk attributable to the spot remeasurement of the US dollar denominated intercompany loan, as Euro Barbados maintains a Euro functional currency.

For each floating-rate intercompany cross-currency interest rate swap, 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 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 Condensed 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 and US dollar denominated loans. 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 are no credit-risk-related contingent features associated with the intercompany 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.

In May 2020, Woodward settled the Euro denominated intercompany loans receivable with identical terms and notional value to the Fixed-Rate Cross-Currency Swaps and reciprocal cross-currency interest rate swaps. The cash flow hedges designated on these instruments were discontinued at the date of settlement and resulted in a reclassification of \$32,200 of previously unrecognized gains from accumulated OCI into earnings. The gain on discontinuation of the cash flow hedging relationships is recognized in "Gain on cross-currency interest rate swaps, net" in Woodward's Condensed Consolidated Statements of Earnings.

Concurrent with settlement of the Fixed-Rate Cross-Currency Swaps and the discontinuation of the previous cash flow hedging relationships, five corresponding US dollar intercompany loans payable, with identical terms and notional values of each tranche of the 2020 Fixed-Rate Cross-Currency Swaps, together with reciprocal fixed-rate intercompany cross-currency interest rate swaps were entered into by Euro 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 US dollar denominated intercompany loans over a thirteen-year period, as Euro Barbados maintains a Euro functional currency.

For each of the fixed-rate intercompany cross-currency interest rate swaps, 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 Condensed 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 and US dollar denominated intercompany loans, including associated interest. Hedge effectiveness is assessed based on the fair value changes of the derivative instruments and such hedges are 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.

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. Related to the Series M Notes, included in foreign currency translation adjustments within total comprehensive (losses) earnings are net foreign exchange losses of \$3,199 for the fiscal year ended September 30, 2020, compared to net foreign exchanges gains of \$2,682 for the fiscal year ended September 30, 2019 and net foreign exchange gains of \$838 for the fiscal year ended September 30, 2018.

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, 2020		
Derivatives in:	Location	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
Cross currency interest rate swap agreement designated as fair value hedges	Selling, general and administrative expenses	\$ 4,592	\$ 4,832	\$ 5,396
Cross currency interest rate swap agreements designated as cash flow hedges	Selling, general and administrative expenses	(3,190)	13,430	(3,190)
Treasury lock agreement designated as cash flow hedge	Interest expense	(72)	—	(72)
		<u>\$ 1,330</u>	<u>\$ 18,262</u>	<u>\$ 2,134</u>
		Year Ended September 30, 2019		
Derivatives in:	Location	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
Cross currency interest rate swap agreement designated as fair value hedges	Selling, general and administrative expenses	\$ (9,394)	\$ (8,317)	\$ (8,356)
Cross currency interest rate swap agreements designated as cash flow hedges	Selling, general and administrative expenses	(23,018)	(39,442)	(23,018)
Treasury lock agreement designated as cash flow hedge	Interest expense	(72)	—	(72)
		<u>\$ (32,484)</u>	<u>\$ (47,759)</u>	<u>\$ (31,446)</u>

		Year Ended September 30, 2018		
		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
Derivatives in:	Location			
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)
		<u>\$ 1,467</u>	<u>\$ 23,000</u>	<u>\$ 1,467</u>

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 \$21,132 as of September 30, 2020 and net losses of \$5,004 as of September 30, 2019.

Note 10. Supplemental statement of cash flows information

	Year Ended September 30,		
	2020	2019	2018
Interest paid, net of amounts capitalized	\$ 27,148	\$ 39,909	\$ 29,677
Income taxes paid	94,088	68,112	44,831
Income tax refunds received	17,653	1,454	1,976
Non-cash activities:			
Purchases of property, plant and equipment on account	3,076	8,737	11,982
Impact of the adoption of ASC 606	—	38,700	—
Impact of the adoption of ASC 842 (Note 5)	255	—	—
Impact of the adoption of ASU 2016-16	—	1,005	—
Common shares issued from treasury to settle benefit obligations (Note 22)	14,748	14,846	14,741
Purchases of treasury stock on account	—	4,204	—

Note 11. Sale of businesses

In the first quarter of fiscal year 2020, Woodward's board of directors ("the Board") approved a plan to divest Woodward's renewable power systems business, protective relays business, and other businesses within the Company's Industrial segment (collectively, the "disposal group").

Woodward determined that the approved plan to divest the disposal group represented a triggering event requiring (i) the net assets of the disposal group to be classified as held for sale and (ii) the long-lived assets attributable to the disposal group be assessed for impairment. Given the facts and circumstances at that time, Woodward determined that the value of the long-lived assets of the disposal group, including goodwill, intangible assets, ROU assets and property, plant, and equipment, were not recoverable and a \$22,900 non-cash impairment charge was recorded during the fiscal year ended September 30, 2020. The non-cash impairment charge removed all the goodwill, intangible assets, ROU assets and property, plant, and equipment associated with the disposal group from the Consolidated Balance Sheets as of June 30, 2020.

Further, on the approval of the divestiture plan and subsequent marketing of the disposal group, Woodward determined that based on the current market conditions, the carrying value of the disposal group's remaining held for sale net assets exceeded the fair value. As a result, Woodward recorded a valuation allowance to reduce the carrying value of the net assets of the disposal group to their fair value. The non-cash impairment charge associated with the long-lived assets, and related valuation allowance for the other remaining net assets attributable to the disposal group, resulted in a total impairment charge of \$37,902.

In determining the amount by which the carrying value of the disposal group's remaining net assets exceeded their fair value, Woodward considered primarily the market value of the assets held for sale based on negotiations it had entered into with affiliates of the AURELIUS Group for the sale of the majority of the disposal group. On January 31, 2020, Woodward entered into a definitive agreement to sell the majority of the disposal group to affiliates of the AURELIUS Group for \$23,400, subject to customary purchase price adjustments, consisting of cash and a \$6,000 promissory note. The assets were primarily located in Germany, Poland and Bulgaria and accounted for approximately \$88,000 of sales in fiscal year 2019. The valuation reserve recorded to reduce the carrying value of the net assets held for sale was based on the estimated selling price pursuant to the definitive agreement reduced by the estimated working capital adjustments, transaction costs, and anticipated losses on assets held for sale that were not included in the disposal group to be sold to the AURELIUS Group.

During the third and fourth quarter of fiscal year 2020, Woodward recognized an additional loss on sale of the disposal group, resulting in a net loss of \$515 as a result of working capital adjustments realized upon closing of the sale. The net loss on sale of the disposal group is recorded in the line item "Other (income) expense, net" in the Consolidated Statements of Earnings.

The transactions consummating the sale of the disposal group were completed on April 30, 2020. The carrying value of the assets and liabilities sold were as follows:

	June 30, 2020	
Assets:		
Accounts receivable	\$	17,637
Inventories		441
Other current assets		796
Other assets		51
Total assets		<u>18,925</u>
Liabilities:		
Accounts payable		7,633
Accrued liabilities		2,998
Other liabilities		450
Total liabilities	\$	<u>11,081</u>

Note 12. Inventories

	September 30, 2020	September 30, 2019
Raw materials	\$ 123,626	\$ 134,878
Work in progress	92,934	133,885
Component parts ⁽¹⁾	255,980	287,128
Finished goods	66,889	59,051
Customer supplied inventory	14,955	13,396
On-hand inventory for which control has transferred to the customer	(116,441)	(111,502)
	<u>\$ 437,943</u>	<u>\$ 516,836</u>

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

Note 13. Property, plant, and equipment

	September 30, 2020	September 30, 2019
Land and land improvements	\$ 83,095	\$ 94,976
Buildings and building improvements	551,540	587,541
Leasehold improvements	18,610	17,446
Machinery and production equipment	776,884	731,159
Computer equipment and software	123,903	124,201
Office furniture and equipment	41,177	39,934
Other	19,814	19,346
Construction in progress	36,367	57,624
	<u>1,651,390</u>	<u>1,672,227</u>
Less accumulated depreciation	(653,975)	(613,452)
Property, plant, and equipment, net	<u>\$ 997,415</u>	<u>\$ 1,058,775</u>

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, and in fiscal year 2019, finalized the relocation. On December 30, 2019, the Company closed on the sale of one of two parcels of real property at the Duarte facility and recorded a pre-tax gain on sale of assets of \$13,522. On August 11, 2020, the Company closed on the sale of the final parcel of real property at the Duarte facility and recorded a pre-tax gain on sale of assets of \$8,801 (see Note 19, *Other (income) expense, net*).

In the first quarter of fiscal year 2020, Woodward determined that the approved plan to divest of the disposal group (see Note 11, *Sale of businesses*) represented a triggering event requiring the long-lived assets attributable to the disposal group be assessed for impairment. Given the facts and circumstances at that time, Woodward determined that the remaining value of the plant, property and equipment of the disposal group was not recoverable, and a \$13,421 non-cash impairment charge was recorded during fiscal year 2020.

On September 25, 2020 the Company closed on the sale of its Loveland, Colorado campus with a concurrent purchase of a new property in Windsor, Colorado for future operations, resulting in recognition of a pre-tax gain on sale of assets of \$2,330 (see Note 19, *Other (income) expense, net*).

For the fiscal years ended September 30, 2020, 2019, and 2018, Woodward had depreciation expense as follows:

	Year Ended September 30,		
	2020	2019	2018
Depreciation expense	\$ 91,700	\$ 85,982	\$ 71,389

For the fiscal years ended September 30, 2020, 2019, and 2018, Woodward capitalized interest that would have otherwise been included in interest expense of the following:

	Year Ended September 30,		
	2020	2019	2018
Capitalized interest	\$ 136	\$ 779	\$ 2,187

Note 14. Goodwill

	September 30, 2019	Impairment Charges	Additions	Effects of Foreign Currency Translation	September 30, 2020
Aerospace	\$ 455,423	\$ —	\$ —	\$ —	\$ 455,423
Industrial	342,430	(8,640)	—	19,039	352,829
Consolidated	\$ 797,853	\$ (8,640)	\$ —	\$ 19,039	\$ 808,252

	September 30, 2018	Impairment Charges	Additions	Effects of Foreign Currency Translation	September 30, 2019
Aerospace	\$ 455,423	\$ —	\$ —	\$ —	\$ 455,423
Industrial	357,827	—	—	(15,397)	342,430
Consolidated	\$ 813,250	\$ —	\$ —	\$ (15,397)	\$ 797,853

In the first quarter of fiscal year 2020, Woodward determined that the approved plan to divest of the disposal group (see Note 11, *Sale of businesses*) represented a triggering event requiring the long-lived assets attributable to the disposal group be assessed for impairment. Given the facts and circumstances at the time, Woodward determined that the remaining value of the goodwill of the disposal group was not recoverable and an \$8,640 non-cash impairment charge was recorded during the fiscal year ended September 30, 2020.

Woodward tests goodwill for impairment at the reporting unit level on an annual basis or at any time there is an indication goodwill may be impaired, commonly referred to as triggering events. Woodward completed its annual goodwill impairment test as of July 31, 2020 during the quarter ended September 30, 2020. 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, 2020 impairment test were discounted using weighted-average cost of capital assumptions ranging from 8.30% to 9.99%. The terminal values of the forecasted cash flows were calculated using the Gordon Growth Model and assumed an annual compound growth rate after five years of 3.44%. 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 test performed as of July 31, 2020 did not indicate impairment of any of Woodward's reporting units. Woodward's July 31, 2020 goodwill analysis indicated a premium of approximately 17% compared to the carrying value of one of its reporting units in the Aerospace segment, which is primarily comprised of the thrust reverser actuation systems ("TRAS") business and was significantly impacted by the COVID-19 related declines in commercial OEM and aftermarket. Woodward is not aware of any facts, circumstances or triggering events that have arisen indicating that goodwill has been impaired or that the premium of approximately 17% has changed significantly for this reporting unit since Woodward's July 31, 2020 analysis.

Note 15. Intangible assets, net

	September 30, 2020			September 30, 2019		
	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	\$ (196,520)	\$ 85,163	\$ 281,683	\$ (181,995)	\$ 99,688
Industrial	429,249	(57,045)	\$ 372,204	407,683	(43,986)	363,697
Total	<u>\$ 710,932</u>	<u>\$ (253,565)</u>	<u>\$ 457,367</u>	<u>\$ 689,366</u>	<u>\$ (225,981)</u>	<u>\$ 463,385</u>
Intellectual property:						
Aerospace	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Industrial	15,778	(15,640)	\$ 138	19,201	(18,705)	496
Total	<u>\$ 15,778</u>	<u>\$ (15,640)</u>	<u>\$ 138</u>	<u>\$ 19,201</u>	<u>\$ (18,705)</u>	<u>\$ 496</u>
Process technology:						
Aerospace	\$ 76,371	\$ (63,956)	\$ 12,415	\$ 76,371	\$ (59,913)	\$ 16,458
Industrial	90,945	(22,300)	\$ 68,645	92,820	(24,926)	67,894
Total	<u>\$ 167,316</u>	<u>\$ (86,256)</u>	<u>\$ 81,060</u>	<u>\$ 169,191</u>	<u>\$ (84,839)</u>	<u>\$ 84,352</u>
Other intangibles:						
Aerospace	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Industrial	235	(183)	52	1,541	(1,249)	292
Total	<u>\$ 235</u>	<u>\$ (183)</u>	<u>\$ 52</u>	<u>\$ 1,541</u>	<u>\$ (1,249)</u>	<u>\$ 292</u>
Intangible asset with indefinite life:						
Tradename:						
Aerospace	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Industrial	68,094	—	\$ 68,094	63,467	—	63,467
Total	<u>\$ 68,094</u>	<u>\$ —</u>	<u>\$ 68,094</u>	<u>\$ 63,467</u>	<u>\$ —</u>	<u>\$ 63,467</u>
Total intangibles:						
Aerospace	\$ 358,054	\$ (260,476)	\$ 97,578	\$ 358,054	\$ (241,908)	\$ 116,146
Industrial	647,738	(138,605)	\$ 509,133	625,212	(129,366)	495,846
Consolidated Total	<u>\$1,005,792</u>	<u>\$ (399,081)</u>	<u>\$ 606,711</u>	<u>\$ 983,266</u>	<u>\$ (371,274)</u>	<u>\$ 611,992</u>

Indefinite lived intangible assets

The Woodward L'Orange tradename intangible asset is tested for impairment on an annual basis and more often if an event occurs or circumstances change that indicate the fair value of the Woodward L'Orange intangible asset may be below its carrying amount. The impairment test consists of comparing the fair value of the Woodward L'Orange tradename intangible asset, determined using discounted cash flows based on the relief from royalty method under the income approach, with its carrying amount. If the carrying amount of the Woodward L'Orange tradename intangible asset exceeds its fair value, an impairment loss would be recognized to reduce the carrying amount to its fair value. Woodward has not recorded any impairment charges for this asset.

During the fourth quarter, Woodward completed its annual impairment test of the Woodward L'Orange tradename intangible asset as of July 31, 2020 for the fiscal year ended September 30, 2020. The fair value of the Woodward L'Orange tradename intangible assets was determined using discounted cash flows based on the relief from royalty method under the income approach. 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, royalty rates, 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 the forecasted cash flow. Management projects revenue growth rates and cash flows based on Woodward L'Orange's current operational results, expected performance and operational strategies over a five year period. These projections are adjusted to reflect current economic conditions and demand for certain products, and require considerable management judgment.

The forecasted cash flow used in the July 31, 2020 impairment test was discounted using weighted-average cost of capital assumption of 8.5%. The terminal value of the forecasted cash flow was calculated using the Gordon Growth Model and assumed an annual compound growth rate after five years of 3.44%. 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 the forecasted cash flow. The results of impairment test performed as of July 31, 2020 indicated the estimated fair value of the Woodward L'Orange tradename intangible asset was in excess of its carrying value, and accordingly, no impairment existed.

Finite lived intangible assets

In the first quarter of fiscal year 2020, Woodward determined that the approved plan to divest of the disposal group (see Note 11, *Sale of businesses*) represented a triggering event requiring the long-lived assets attributable to the disposal group be assessed for impairment. Given the facts and circumstances at that time, Woodward determined that the remaining value of the intangible assets of the disposal group was not recoverable and a \$200 non-cash impairment charge was recorded for the fiscal year ended September 30, 2020.

For the fiscal years ended September 30, 2020, 2019, and 2018, Woodward recorded amortization expense associated with intangibles of the following:

	Year Ended September 30,		
	2020	2019	2018
Amortization expense	<u>\$ 39,458</u>	<u>\$ 56,022</u>	<u>\$ 44,742</u>

Future amortization expense associated with intangibles is expected to be:

Year Ending September 30:

2021		\$	40,388
2022			38,275
2023			37,224
2024			33,472
2025			28,257
Thereafter			361,001
		\$	<u>538,617</u>

Note 16. Credit facilities, short-term borrowings and long-term debt

As of September 30, 2020, Woodward's short-term borrowings and availability under its various short-term credit facilities follows:

	Total availability	Outstanding letters of credit and guarantees	Outstanding borrowings	Remaining availability
Revolving credit facility	\$ 1,000,000	\$ (11,771)	\$ —	\$ 988,229
Foreign lines of credit and overdraft facilities	7,567	—	—	7,567
Foreign performance guarantee facilities	511	(256)	—	255
	<u>\$ 1,008,078</u>	<u>\$ (12,027)</u>	<u>\$ —</u>	<u>\$ 996,051</u>

Revolving credit facility

Woodward maintains a \$1,000,000 revolving credit facility established under a revolving credit agreement among Woodward, a syndicate of lenders and Wells Fargo Bank, National Association, as administrative agent (the "Revolving Credit Agreement"). The Revolving Credit Agreement provided for the option to increase available borrowings up to \$1,500,000, subject to lenders' participation. Borrowings under the Revolving Credit Agreement can be made by Woodward and certain of its foreign subsidiaries in U.S. dollars or in foreign currencies other than the U.S. dollar and generally bear interest at LIBOR plus 0.875% to 1.75%. The Revolving Credit Agreement matures on June 19, 2024. Under the Revolving Credit Agreement, there were no borrowings outstanding as of September 30, 2020, and \$262,297 in principal amount of borrowings outstanding as of September 30, 2019, at an effective interest rate of 3.01%.

The Revolving Credit Agreement contains certain covenants customary with such agreements, which are generally consistent with the covenants applicable to Woodward's long-term debt agreements, and contains customary events of default, including certain cross default provisions related to Woodward's other outstanding debt arrangements in excess of \$60,000, the occurrence of which would permit the lenders to accelerate the amounts due thereunder. In addition, the Revolving Credit Agreement includes the following financial covenants: (i) a maximum permitted leverage ratio of consolidated net debt to consolidated earnings before interest, taxes, depreciation, stock-based compensation, and amortization, plus any usual non-cash charges to the extent deducted in computing net income and transaction costs associated with permitted acquisitions (incurred within six-months of the permitted acquisition), minus any usual non-cash gains to the extent added in computing net income ("Leverage Ratio") for Woodward and its consolidated subsidiaries of 3.5 to 1.0, which ratio, subject to certain restrictions, may increase to 4.0 to 1.0 for each period of four consecutive quarters during which a permitted acquisition occurs, and (ii) a minimum consolidated net worth of \$1,156,000 plus (a) 50% of Woodward's positive net income for the prior fiscal year and (b) 50% of Woodward's net cash proceeds resulting from certain issuances of stock, subject to certain adjustments.

Woodward's obligations under the Revolving Credit Agreement are guaranteed by Woodward FST, Inc., Woodward MPC, Inc., and Woodward HRT, Inc., each of which is a wholly owned subsidiary of Woodward.

As of September 30, 2020, there were no borrowings outstanding under the Revolving Credit Agreement, and as of September 30, 2019, \$220,000 of the borrowings under the Revolving Credit Agreement were classified as short-term borrowings based on Woodward's intent and ability to pay this amount in the next twelve months.

Management believes that Woodward was in compliance with the covenants under the Revolving Credit Agreement at September 30, 2020.

Short-term borrowings

Woodward has other foreign lines of credit and foreign overdraft facilities at various financial institutions, which are generally reviewed annually for renewal and are subject to the usual terms and conditions applied by the financial institutions. Pursuant to the terms of the related facility agreements, Woodward's foreign performance guarantee facilities are limited in use to providing performance guarantees to third parties. There were no borrowings outstanding on Woodward's foreign lines of credit and foreign overdraft facilities as of both September 30, 2020 and September 30, 2019.

Long-term debt

	September 30, 2020	September 30, 2019
Long-term portion of revolving credit facility - Floating rate (LIBOR plus 0.875% - 1.75%), due June 19, 2024; unsecured	\$ —	\$ 42,297
Series G notes – 3.42%, due November 15, 2020; unsecured	50,000	50,000
Series H notes – 4.03%, due November 15, 2023; unsecured	25,000	25,000
Series I notes – 4.18%, due November 15, 2025; unsecured	25,000	25,000
Series J notes – Floating rate (LIBOR plus 1.25%), due November 15, 2020; unsecured	50,000	50,000
Series K notes – 4.03%, due November 15, 2023; unsecured	50,000	50,000
Series L notes – 4.18%, due November 15, 2025; unsecured	50,000	50,000
Series M notes – 1.12% due September 23, 2026; unsecured	46,962	43,770
Series N notes – 1.31% due September 23, 2028; unsecured	90,401	84,257
Series O notes – 1.57% due September 23, 2031; unsecured	50,484	47,053
Series P notes – 4.27% due May 30, 2025; unsecured	85,000	85,000
Series Q notes – 4.35% due May 30, 2027; unsecured	85,000	85,000
Series R notes – 4.41% due May 30, 2029; unsecured	75,000	75,000
Series S notes – 4.46% due May 30, 2030; unsecured	75,000	75,000
Series T notes – 4.61% due May 30, 2033; unsecured	80,000	80,000
Finance leases (Note 5)	2,807	—
Unamortized debt issuance costs	(2,171)	(2,478)
Total long-term debt	838,483	864,899
Less: Current portion of long-term debt	101,634	—
Long-term debt, less current portion	<u>\$ 736,849</u>	<u>\$ 864,899</u>

The Notes

On October 1, 2013, Woodward entered into a note purchase agreement relating to the sale by Woodward of an aggregate principal amount of \$250,000 of its senior unsecured notes in a series of private placement transactions. Woodward issued the Series G, H and I Notes (the “First Closing Notes”) on October 1, 2013. Woodward issued the Series J, K and L Notes (the “Second Closing Notes” and with the First Closing Notes, collectively the “USD Notes”) on November 15, 2013. On November 15, 2020, Woodward paid the entire principal balance of \$100,000 on the Series G and J Notes using cash on hand and proceeds from borrowings under its existing revolving credit facility.

On September 23, 2016, Woodward and the BV Subsidiary each entered into note purchase agreements (the “2016 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 Series M Notes. The BV Subsidiary issued (a) €77,000 aggregate principal amount of the BV Subsidiary’s Series N Senior Notes (the “Series N Notes”) and (b) €43,000 aggregate principal amount of the BV Subsidiary’s Series O Senior Notes (the “Series O Notes” and together with the Series M Notes and the Series N Notes, the “2016 Notes”).

On May 31, 2018, Woodward 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 (the “Series P Notes”), (b) \$85,000 aggregate principal amount of its Series Q Senior Notes (the “Series Q Notes”), (c) \$75,000 aggregate principal amount of its Series R Senior Notes (the “Series R Notes”), (d) \$75,000 aggregate principal amount of its Series S Senior Notes (the “Series S Notes”), and (e) \$80,000 aggregate principal amount of its Series T Senior Notes (the “Series T Notes”, and together with the Series P Notes, the Series Q Notes, the Series R Notes, and the Series S Notes, the “2018 Notes,” and, together with the USD Notes and 2016 Notes, the “Notes”), in a series of private placement transactions.

In connection with the issuance of the 2018 Notes, the Company entered into cross currency swap transactions in respect of each tranche of the 2018 Notes, which effectively reduced the interest rates on the Series P Notes to 1.82% per annum, the Series Q Notes to 2.15% per annum, the Series R Notes to 2.42% per annum, the Series S Notes to 2.55% per annum and the Series T Notes to 2.90% per annum (see Note 9, *Derivative instruments and hedging activities*).

Interest on the remaining First Closing Notes, and the Series K and L Notes is payable semi-annually on April 1 and October 1 of each year until all principal is paid. Interest on the 2016 Notes is payable semi-annually on March 23 and September 23 of each year, until all principal is paid. Interest on the Series J Notes is payable quarterly on January 1, April 1, July 1 and October 1 of each year until all principal is paid. As of September 30, 2020, the Series J Notes bore interest at an effective rate of 1.52%. Interest on the 2018 Notes is payable semi-annually on May 30 and November 30 of each year until all principal is paid.

None of the Notes were registered under the Securities Act of 1933 and they may not be offered or sold in the United States absent registration or an applicable exemption from registration requirements. Holders of the Notes do not have any registration rights. All of the issued Notes are held by multiple institutions.

Woodward's payment and performance obligations under the Notes, including without limitation the obligations for payment of all principal, interest and any applicable prepayment compensation amount, are guaranteed by (i) Woodward FST, Inc., Woodward MPC, Inc., and Woodward HRT, Inc., each of which is a wholly owned subsidiary of Woodward, and (ii) in the case of the BV Subsidiary's Series N and O Notes, by Woodward. Woodward's obligations under the Notes rank equal in right of payment with all of Woodward's other unsecured unsubordinated debt, including its outstanding debt under its revolving credit facility.

The Notes contain restrictive covenants customary for such financings, including, among other things, covenants that place limits on Woodward's ability to incur liens on assets, incur additional debt (including a leverage or coverage based maintenance test), transfer or sell Woodward's assets, merge or consolidate with other persons and enter into material transactions with affiliates. Under the financial covenants contained in the note purchase agreement governing each series of the Notes, Woodward's priority debt may not exceed, at any time, 25% of its consolidated net worth. Woodward's Leverage Ratio cannot exceed 4.0 to 1.0 during any material acquisition period, or 3.5 to 1.0 at any other time on a rolling four quarter basis. In the event that Woodward's Leverage Ratio exceeds 3.5 to 1.0 during any material acquisition period, the interest rate on each series of Notes will increase. For the Series G, H, I, J, K, L, M, N, and O notes, Woodward's consolidated net worth must at all times equal or exceed \$1,156,000 plus 50% of Woodward's positive net income for each completed fiscal year beginning with the fiscal year ending September 30, 2016. For the 2018 Notes, Woodward's consolidated net worth must at all times equal or exceed \$1,156,000 plus (i) 50% of Woodward's positive net income for each completed fiscal year beginning with the fiscal year ending September 30, 2018 and (ii) 50% of the net cash proceeds received by Woodward on or after May 31, 2018 from the issuance of capital stock, other than issuances pursuant to employee stock option or ownership plans.

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 the Notes at 100% of the principal amount of the series of the Notes to be prepaid (but, in the case of partial prepayment, not less than \$1,000 for each the USD Notes and the 2018 Notes and not less than €1,000 for the 2016 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, as to the USD Notes and 2018 Notes, other than the Series J Notes, is computed by discounting the remaining scheduled payments of interest and principal of the USD Notes and/or 2018 Notes being prepaid at a discount rate equal to the sum of 50 basis points and the yield to maturity of U.S. Treasury securities having a maturity equal to the remaining average life of the USD Notes and/or 2018 Notes being prepaid. The prepayment compensation amount, as to the Series J Notes, generally is computed as a percentage of the principal amount of the Series J Notes equal to 0% after November 15, 2015. The prepayment compensation amount as to the 2016 Notes that is not subject to a swap agreement is computed by discounting the remaining scheduled payments of interest and principal of such notes being prepaid at a discount rate equal to the sum of 50 basis points and the yield to maturity of the German Bund having a maturity equal to the remaining average life of the 2016 Notes being prepaid. The prepayment compensation amount as to a 2016 Notes that is subject to a swap agreement entered into by the holder of such note under which the holder will receive payment in U.S. dollars in exchange for scheduled Euro payments of principal and interest on the Euro denominated 2016 Notes, adjusted for theoretical holder returns foregone on hypothetical reinvestments in U.S. Treasury securities (the "Swapped Notes") is equal to the excess of an amount equal to the remaining scheduled payments to be paid in respect of such called principal under such swap agreement discounted at a rate equal to 50 basis points and the yield to maturity of U.S. Treasury securities having a maturity equal to the remaining average life of the Swapped Notes being prepaid over the amount of payments in U.S. dollars that would be paid to the holder of the Swapped Note in respect of the called principal under the swap agreement, which amount will be increased or reduced, as applicable, in an amount equal to any net gain or loss realized by the holder of such Swapped Note on swap transactions under such swap agreement as a result of such prepayment.

Required future principal payments of the Notes as of September 30, 2020 are as follows:

Year Ending September 30:

2021	\$	100,000
2022		—
2023		—
2024		75,000
2025		85,000
Thereafter		577,846
	\$	<u>837,846</u>

Certain financial and other covenants under Woodward’s debt agreements contain customary restrictions on the operation of its business. Management believes that Woodward was in compliance with the covenants under the long-term debt agreements at September 30, 2020.

Debt Issuance Costs

Amounts recognized as interest expense from the amortization of debt issuance costs were \$892 in fiscal year 2020, \$1,094 in fiscal year 2019, and \$1,256 in fiscal year 2018. Unamortized debt issuance costs associated with the Notes of \$2,171 as of September 30, 2020 and \$2,478 as of September 30, 2019 were recorded as a reduction in “Long-term debt, less current portion” in the Consolidated Balance Sheets. Unamortized debt issuance costs associated with Woodward’s Revolving Credit Agreements of \$2,242 as of September 30, 2020 and \$2,840 as of September 30, 2019 were recorded as “Other assets” in the Consolidated Balance Sheets. Amortization of debt issuance costs is included in operating activities in the Consolidated Statements of Cash Flows.

Note 17. Accrued liabilities

	<u>At September 30,</u>	
	<u>2020</u>	<u>2019</u>
Salaries and other member benefits	\$ 50,850	\$ 115,649
Warranties	18,972	27,309
Interest payable	15,281	13,808
Accrued retirement benefits	3,051	3,587
Current portion of loss reserve on contractual lease commitments	—	1,245
Net current contract liabilities (Note 3)	24,620	27,891
Restructuring charges	3,395	507
Taxes, other than income	13,925	15,708
Other	21,700	22,423
	<u>\$ 151,794</u>	<u>\$ 228,127</u>

Warranties

Provisions of Woodward’s sales agreements include product warranties customary to these types of agreements. Accruals are established for specifically identified warranty issues that are probable to result in future costs. Warranty costs are accrued as revenue is recognized on a non-specific basis whenever past experience indicates a normal and predictable pattern exists. Changes in accrued product warranties were as follows:

	<u>Twelve-Months Ended September 30,</u>		
	<u>2020</u>	<u>2019</u>	<u>2018</u>
Warranties, beginning of period	\$ 27,309	\$ 20,130	\$ 13,597
Increases due to acquisition of L'Orange	—	—	6,045
Impact from adoption of ASC 606	—	705	—
Expense, net of recoveries	8,687	14,559	5,158
Reductions for settling warranties	(17,422)	(7,540)	(4,413)
Foreign currency exchange rate changes	398	(545)	(257)
Warranties, end of period	<u>\$ 18,972</u>	<u>\$ 27,309</u>	<u>\$ 20,130</u>

Restructuring charges

In fiscal year 2018, the Company recorded restructuring charges totaling \$17,013, 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 Duarte facility, which manufactures thrust reverser actuation systems, is part of the Company's Aerospace segment. The remaining restructuring charges recognized during the fiscal year ended September 30, 2018 consist of workforce management costs related to aligning the Company's industrial turbomachinery business, which is part of the Company's Industrial segment, with the then current market conditions. All of the restructuring charges recorded during the fiscal year ended September 30, 2018 were recorded as nonsegment expenses and were paid as of September 30, 2020.

During the third quarter of fiscal year 2020, the Company committed to a plan of termination (the "Termination Plan"), as well as other cost savings actions, in response to the ongoing global economic challenges resulting from the COVID-19 pandemic and its impact on the Company's business. The Termination Plan involved the termination and/or furlough of employees and contractors at certain of the Company's operating facilities, primarily in the United States. As a result of the Termination Plan and other related actions, the Company incurred \$23,673 of restructuring charges for employee severance and benefits costs as of September 30, 2020, with the majority of the cash expenditures being paid by September 30, 2020. All of the restructuring charges recorded during the fiscal year ended September 30, 2020 were recorded as nonsegment expenses and the remaining unpaid amounts are expected to be paid within one year of the balance sheet date.

The summary of activity in accrued restructuring charges during the fiscal years ended September 30, 2020 and September 30, 2019 is as follows:

	Balances as of September 30, 2019	Period Activity			Non-cash activity	Balances as of September 30, 2020
		Charges	Payments	Foreign currency exchange rate changes		
Workforce management costs associated with:						
Duarte plant relocation	\$ 440	\$ —	\$ (440)	\$ —	\$ —	\$ —
Industrial turbomachinery business realignment	67	—	(67)	—	—	—
COVID-19 pandemic	—	23,673	(18,065)	77	(2,290)	3,395
Total	<u>\$ 507</u>	<u>\$ 23,673</u>	<u>\$ (18,572)</u>	<u>\$ 77</u>	<u>\$ (2,290)</u>	<u>\$ 3,395</u>

	Balances as of September 30, 2018	Period Activity			Non-cash activity	Balances as of September 30, 2019
		Charges	Payments	Foreign currency exchange rate changes		
Workforce management costs associated with:						
Duarte plant relocation	\$ 12,504	\$ —	\$ (8,685)	\$ —	\$ (3,379)	\$ 440
Industrial turbomachinery business realignment	4,018	—	(3,760)	—	(191)	67
Total	<u>\$ 16,522</u>	<u>\$ —</u>	<u>\$ (12,445)</u>	<u>\$ —</u>	<u>\$ (3,570)</u>	<u>\$ 507</u>

Note 18. Other liabilities

	At September 30,	
	2020	2019
Net accrued retirement benefits, less amounts recognized within accrued liabilities	\$ 114,013	\$ 111,257
Total unrecognized tax benefits	10,230	10,644
Noncurrent income taxes payable ⁽¹⁾	18,322	20,251
Deferred economic incentives ⁽²⁾	9,105	11,535
Loss reserve on contractual lease commitments ⁽³⁾	—	1,754
Cross-currency swap derivative liability ⁽⁴⁾	51,387	—
Noncurrent operating lease liabilities	14,569	—
Net noncurrent contract liabilities ⁽⁵⁾	366,642	337,165
Other	33,637	13,482
	<u>\$ 617,905</u>	<u>\$ 506,088</u>

- (1) See Note 20, *Income taxes* for more information on the noncurrent income taxes payable.
- (2) Woodward receives certain economic incentives from various state and local authorities related to capital expansion projects. Such amounts are initially recorded as deferred credits and are being recognized as a reduction to pre-tax expense over the economic lives of the related capital expansion projects.
- (3) In connection with the construction of a new production facility in Niles, Illinois, Woodward vacated a lease facility in Skokie, Illinois, and recorded a loss reserve on the estimated remaining contractual lease commitment, net of anticipated sublease income. As of September 30, 2019, the current portion of the accrued loss reserve on contractual lease commitments was included in “accrued liabilities” (see Note 17, *Accrued liabilities*). Woodward adopted ASC 842 on October 1, 2019, which requires that any pre-adoption liabilities related to exit or disposal cost obligations reduce the amount of the ROU asset recognized upon adoption. Accordingly, as of October 1, 2019, Woodward recognized a finance lease liability of \$2,688 consisting of the future lease component payments, with no corresponding ROU asset recognized, and reduced the current and noncurrent portions of the loss reserve on contractual lease commitments to zero. The amount of the finance lease liability will be reduced in an amount equal to the lease payments made over the remaining term of the lease, which ends in 2022. Future non-lease component payments on the lease and future sublease income received will be recognized in the periods in which they are earned.
- (4) See Note 8, *Financial instruments and fair value measurements* for more information on the cross currency swap derivative liability.
- (5) See Note 3, *Revenue*, for more information on net noncurrent contract liabilities.

Note 19. Other (income) expense, net

	Year Ended September 30,		
	2020	2019	2018
Equity interest in the earnings of the JV (Note 7)	\$ (15,580)	\$ (12,932)	\$ (3,339)
Net (gain) loss on sales of assets and businesses ⁽¹⁾	(23,598)	1,925	(1,106)
Rent income	(1,403)	(245)	(170)
Net (gain) loss on investments in deferred compensation program	(3,376)	(942)	(1,661)
Loss on forward option derivative instrument	—	—	5,543
Other components of net periodic pension and other postretirement benefit, excluding service cost and interest expense	(11,809)	(12,965)	(12,801)
Other	(400)	(810)	(792)
	<u>\$ (56,166)</u>	<u>\$ (25,969)</u>	<u>\$ (14,326)</u>

- (1) Included in net (gain) loss on sale of assets and businesses for the fiscal year ended September 30, 2020 was the pre-tax gain on sale of Duarte real property in the amount of \$22,323, the pre-tax gain on sale of the Loveland campus of \$2,330, and a net loss on divestiture of the disposal group of \$515.

Note 20. Income taxes

Income taxes consisted of the following:

	Year Ended September 30,		
	2020	2019	2018
Current:			
Federal	\$ 15,976	\$ 40,173	\$ 39,979
State	1,383	2,402	3,697
Foreign	22,588	34,660	25,968
Deferred:			
Federal	10,784	(2,015)	(10,519)
State	(547)	(2,948)	(3,784)
Foreign	(8,698)	(11,262)	(16,141)
	<u>\$ 41,486</u>	<u>\$ 61,010</u>	<u>\$ 39,200</u>

Earnings before income taxes by geographical area consisted of the following:

	Year Ended September 30,		
	2020	2019	2018
United States	\$ 180,753	\$ 211,267	\$ 181,671
Other countries	101,128	109,345	37,907
	<u>\$ 281,881</u>	<u>\$ 320,612</u>	<u>\$ 219,578</u>

Significant components of deferred income taxes presented in the Consolidated Balance Sheets are related to the following:

	At September 30,	
	2020	2019
Deferred tax assets:		
Defined benefit plans, other postretirement	\$ 6,238	\$ 6,535
Foreign net operating loss carryforwards	6,106	6,836
Inventory	53,867	51,740
Stock-based and other compensation	35,919	45,839
Defined benefit plans, pension	5,624	11,399
Deferred revenue net of unbilled receivables	39,990	32,310
Other reserves	10,119	11,571
Tax credits and incentives	14,340	13,580
Lease obligations	5,764	—
Other	9,223	5,611
Valuation allowance	(1,833)	(3,638)
Total deferred tax assets, net of valuation allowance	<u>185,357</u>	<u>181,783</u>
Deferred tax liabilities:		
Goodwill and intangibles - net	(218,900)	(212,926)
Property, plant and equipment	(107,862)	(97,469)
Right of use assets	(4,837)	—
Other	(2,673)	(4,589)
Total deferred tax liabilities	<u>(334,272)</u>	<u>(314,984)</u>
Net deferred tax liabilities	<u>\$ (148,915)</u>	<u>\$ (133,201)</u>

Woodward has recorded a net operating loss (“NOL”) deferred tax asset of \$6,106 as of September 30, 2020 and \$6,836 as of September 30, 2019. A portion of these NOL carryforwards started to expire in 2019 and are currently offset by a valuation allowance. Woodward has placed valuation allowances against all other NOL carryforwards that are less than 50 percent likely to be realized.

Deferred tax assets are reduced by a valuation allowance if, based on the weight of available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Both positive and negative evidence are considered in forming Woodward’s judgment as to whether a valuation allowance is appropriate, and more weight is given to evidence that can be objectively verified. Valuation allowances are reassessed whenever there are changes in circumstances that may cause a change in judgment. The change in the valuation allowance was primarily the result of the expiration of net operating losses at a wholly owned subsidiary.

At September 30, 2020, Woodward has not provided for taxes on undistributed foreign earnings of \$296,165 that it considered indefinitely reinvested. These earnings could become subject to income taxes if they are remitted as dividends, are loaned to Woodward or any of Woodward's subsidiaries located in the United States, or if Woodward sells its stock in the foreign subsidiaries. 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.

On December 22, 2017 the U.S. enacted the Tax Act. The Tax Act included significant changes to prior tax law, including a permanent reduction to the U.S federal corporate income tax rate of 35% to 21%, a one-time repatriation tax on deferred foreign income ("Transition Tax"), deemed inclusions of foreign low tax earnings, limitations on certain deductions, adjusted foreign tax credits, and business-related exclusions.

Enactment of the Tax Act during December 2017 resulted in a net change to Woodward's income tax expense in the amount of \$14,778, which was recorded in the three-months ended December 31, 2017. After adjustments to amounts made throughout fiscal year 2018, the net impact of the enactment of the Tax Act was \$10,860. Woodward finalized its assessment of the income tax effects of the Tax Act in the first quarter of fiscal year 2019.

On June 14, 2019, the Internal Revenue Service ("IRS") issued final regulations that modified the Transition Tax computation required by the Tax Act. As a result, in the three-months ended June 30, 2019, Woodward recognized additional income tax expense related to the Transition Tax of \$10,588.

The permanent reduction to the U.S. federal corporate income tax rate from 35% to 21% was effective January 1, 2018 (the "Effective Date"). When a U.S. federal tax rate change occurs during a taxpayer's fiscal year, taxpayers are required to compute a weighted daily average rate for the fiscal year of enactment. As a result of the Tax Act, Woodward calculated a U.S. federal statutory corporate income tax rate of 24.5% for the fiscal year ending September 30, 2018 and applied this rate in computing the income tax provision for the fiscal year ended September 30, 2018. The U.S. federal statutory corporate income tax rate of 24.5% is the weighted daily average rate between the pre-enactment U.S. federal statutory tax rate of 35% applicable to Woodward's 2018 fiscal year prior to the Effective Date and the post-enactment U.S. federal statutory tax rate of 21% applicable to the 2018 fiscal year after the Effective Date. The U.S. federal statutory rate is 21% for the fiscal years ended September 30, 2020 and September 30, 2019.

The following is a reconciliation of the U.S. Federal statutory tax 21% in the fiscal year ended September 30, 2020, 21.0% in fiscal year ended September 30, 2019 and 24.5% in the fiscal year ended September 30, 2018 to Woodward's effective income tax rate:

	Year Ending September 30,		
	2020	2019	2018
<u>Percent of pretax earnings</u>			
Statutory tax rate	21.0%	21.0%	24.5%
State income taxes, net of federal tax benefit	0.3	(0.1)	(0.5)
Taxes on international activities	(2.1)	0.2	(1.8)
Research credit	(3.6)	(3.3)	(4.8)
Net excess income tax benefit from stock-based compensation	(2.8)	(3.5)	(1.4)
Domestic production activities deduction	—	—	(1.6)
Adjustments of prior period tax items	1.0	0.9	(5.0)
Effect of U.S. federal corporate rate reduction on net beginning U.S. deferred tax liability	—	—	(5.0)
Transition Tax	—	3.3	6.2
Increased deferred tax liability associated with anticipated repatriation taxes	—	—	3.7
Effect of U.S. federal corporate rate reduction on net current year U.S. deferred tax activity	—	—	2.0
Other items, net	0.9	0.5	1.6
Effective tax rate	<u>14.7%</u>	<u>19.0%</u>	<u>17.9%</u>

In determining the tax amounts in Woodward's financial statements, estimates are sometimes used that are subsequently adjusted in the actual filing of tax returns or by updated calculations. In addition, Woodward occasionally has resolutions of tax items with tax authorities related to prior years due to the conclusion of audits and the lapse of applicable statutes of limitations. Such adjustments are included in the "Adjustments of prior period tax items" line in the above table. The majority of these adjustments are related to the conclusion of audits, effective settlement, and lapse of applicable statutes of limitations in various tax jurisdictions.

The decrease in the effective tax rate for fiscal year 2020 compared to fiscal year 2019 is primarily attributable to (i) the additional income tax expense resulting from Transition Tax regulations issued by the IRS on June 14, 2019 which did not repeat in the current fiscal year and (ii) increased foreign earnings in a lower tax jurisdiction taxed at a lower rate resulting from the net gain on termination of the cross-currency interest rate swaps termination. This decrease was partially offset by a smaller favorable net excess income tax benefits from stock-based compensation.

A reconciliation of the beginning and ending amounts of gross unrecognized tax benefits follows:

	Year Ending September 30,		
	2020	2019	2018
Beginning balance	\$ 10,305	\$ 8,364	\$ 20,132
Additions to current year tax positions	1,890	1,930	2,675
Reductions to prior year tax positions	(2,415)	—	(14,458)
Additions to prior year tax positions	71	11	15
Lapse of applicable statute of limitations	—	—	—
Ending balance	<u>\$ 9,851</u>	<u>\$ 10,305</u>	<u>\$ 8,364</u>

Included in the balance of unrecognized tax benefits were \$4,730 as of September 30, 2020 and \$4,411 as of September 30, 2019 of tax benefits that, if recognized, would affect the effective tax rate. At this time, Woodward estimates that it is reasonably possible that the liability for unrecognized tax benefits will decrease by as much as \$84 in the next twelve months due to the completion of review by tax authorities, lapses of statutes, and the settlement of tax positions. Woodward accrues for potential interest and penalties related to unrecognized tax benefits and all other interest and penalties related to tax payments in tax expense. Woodward had accrued gross interest and penalties of \$489 as of September 30, 2020 and \$437 as of September 30, 2019.

In March 2020, the U.S. Congress passed the “Coronavirus Aid, Relief, and Economic Security Act” (the “CARES Act”). The CARES Act provides relief from the certain economic impacts of COVID-19 to companies and individuals. Non-income tax impacts of the CARES Act include (i) extension of payment deadlines for certain U.S. payroll taxes and (ii) tax credits for certain qualifying costs incurred by the Company in connection with certain facility closures due to COVID-19. Non-income tax credits are generally recognized as a reduction to the related costs that generated the credits. The non-income tax impacts of the CARES Act were insignificant to the results of operations for the fiscal year ended September 30, 2020.

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 2018 and thereafter. In fiscal year 2020, Woodward concluded its U.S. Federal income tax examination through fiscal year 2017, which included a foreign tax carryback to fiscal year 2016. Woodward’s fiscal years remaining open to examination for significant U.S. state income tax jurisdictions include fiscal years 2016 and thereafter. Woodward closed various audits in foreign jurisdictions in the second and third quarters of fiscal year 2019. Consequently, fiscal years remaining open to examination in significant foreign jurisdictions include 2016 and thereafter.

Note 21. Retirement benefits

Woodward provides various retirement benefits to eligible members of the Company, including contributions to various defined contribution plans, pension benefits associated with defined benefit plans, postretirement medical benefits and postretirement life insurance benefits. Eligibility requirements and benefit levels vary depending on employee location.

Defined contribution plans

Most of the Company’s U.S. employees are eligible to participate in the U.S. defined contribution plan. The U.S. defined contribution plan allows employees to defer part of their annual income for income tax purposes into their personal 401(k) accounts. The Company makes matching contributions to eligible employee accounts, which are also deferred for employee personal income tax purposes. Certain non-U.S. employees are also eligible to participate in similar non-U.S. plans.

Most of Woodward’s U.S. employees with at least two years of service receive an annual contribution of Woodward stock, equal to 5% of their eligible prior year wages, to their personal Woodward Retirement Savings Plan accounts. In the second quarters of fiscal years 2020, 2019, and 2018, Woodward fulfilled its annual Woodward stock contribution obligation using shares held in treasury stock by issuing a total of 124 shares of common stock for a value of \$14,748 in fiscal year 2020, 158 total shares of common stock for a value of \$14,846 in fiscal year 2019, and 202 shares of common stock for a value of \$14,741 in fiscal year 2018. The Woodward Retirement Savings Plan (the “WRS Plan”) held 3,199 shares of Woodward stock as of September 30, 2020 and 3,623 shares as of September 30, 2019. The shares held in the WRS Plan participate in dividends and are considered issued and outstanding for purposes of calculating basic and diluted earnings per share. Accrued liabilities included obligations to contribute shares of Woodward common stock to the WRS Plan of \$11,230 as of September 30, 2020 and \$11,701 as of September 30, 2019.

The amount of expense associated with defined contribution plans was as follows:

	Year Ended September 30,		
	2020	2019	2018
Company costs	\$ 33,769	\$ 35,510	\$ 34,084

Defined benefit plans

Woodward has defined benefit plans that provide pension benefits for certain retired employees in the United States, the United Kingdom, Japan, and Germany. Woodward also provides other postretirement benefits to its employees including postretirement medical benefits and life insurance benefits. Postretirement medical benefits are provided to certain current and retired employees and their covered dependents and beneficiaries in the United States and the United Kingdom. Life insurance benefits are provided to certain retirees in the United States under frozen plans, which are no longer available to current employees. A September 30 measurement date is utilized to value plan assets and obligations for all of Woodward’s defined benefit pension and other postretirement benefit plans.

On October 26, 2018, the High Court of Justice in the United Kingdom (the “High Court”) issued a ruling (the “Court Ruling”) requiring defined benefit plan sponsors in the United Kingdom to equalize benefits payable to men and women under its United Kingdom defined benefit pension plans by amending those plans to increase the pension benefits payable to participants that accrued such benefits during the period from 1990 to 1997. In the Court Ruling, the High Court also provided details on acceptable alternative methods of amending plans to equalize the pension benefits. Although final guidance around the appropriate equalization methodology to be used has not yet been issued, Woodward has concluded that Court Ruling is applicable to its defined benefit pension plan in the United Kingdom and has made the necessary plan amendments. Woodward’s current estimate of the impact of the Court Ruling in the amount of \$601 has been reflected in the United Kingdom defined benefit pension plan’s obligation and assets as of September 30, 2019 was amortized as a net prior service cost as of September 30, 2020. Woodward does not expect any changes to the estimate resulting from final guidance around the appropriate equalization methodology to be used will be material to the United Kingdom defined benefit pension plan’s obligation and assets.

In connection with the acquisition of L’Orange on June 1, 2018, Woodward assumed the unfunded defined benefit pension obligations of the L’Orange defined benefit pension plans in Germany (the “L’Orange Pension Plans”). Woodward’s assumption of the liability associated with the L’Orange Pension Plans was part of the total consideration paid by Woodward to acquire L’Orange and thus reduced Woodward’s cash payment for the transaction. Woodward has completed its valuation of the defined benefit pension obligations associated with the L’Orange Pension Plans and determined the value of the associated unfunded obligation was \$39,257, of which \$1,143 was considered current as of the June 1, 2018 acquisition date. The L’Orange Pension Plans had expenses of \$3,000, \$2,004 and \$673 and Woodward made \$873, \$782 and \$219 of contributions to the L’Orange Pension Plans to pay participant benefits during the years ended September 30, 2020, September 30, 2019 and September 30, 2018, respectively. The L’Orange Pension Plans are unfunded.

Excluding the Woodward HRT Plan, which is only partially frozen to salaried participants, the defined benefit plans in the United States were frozen in fiscal year 2007 and no additional employees may participate in the U.S. plans and no additional service costs will be incurred.

Pension Plans

The actuarial assumptions used in measuring the net periodic benefit cost and plan obligations of retirement pension benefits were as follows:

	2020	2019	2018
United States:			
Weighted-average assumptions to determine benefit obligation at September 30:			
Discount rate	2.75%	3.25%	4.35%
Weighted-average assumptions to determine periodic benefit costs for years ended September 30:			
Discount rate	3.25	4.35	3.80
Long-term rate of return on plan assets	7.39	7.39	7.39

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.

	2020	2019	2018
United Kingdom:			
Weighted-average assumptions to determine benefit obligation at September 30:			
Discount rate	1.62%	1.74%	2.68%
Rate of compensation increase	3.30	3.50	3.60
Weighted-average assumptions to determine periodic benefit costs for years ended September 30:			
Discount rate - service cost	1.79	2.70	2.58
Discount rate - interest cost	1.59	2.51	2.36
Rate of compensation increase	3.50	3.60	3.60
Long-term rate of return on plan assets	4.75	4.75	4.75

	2020	2019	2018
Japan:			
Weighted-average assumptions to determine benefit obligation at September 30:			
Discount rate	1.10%	0.53%	0.62%
Rate of compensation increase	2.00	2.00	2.00
Weighted-average assumptions to determine periodic benefit costs for years ended September 30:			
Discount rate - service cost	0.72	0.80	0.72
Discount rate - interest cost	0.31	0.42	0.38
Rate of compensation increase	2.00	2.00	2.00
Long-term rate of return on plan assets	2.50	2.50	2.50

	2020	2019	2018
Germany:			
Weighted-average assumptions to determine benefit obligation at September 30:			
Discount rate	0.97%	0.81%	1.87%
Rate of compensation increase	2.50	2.50	2.50
Weighted-average assumptions to determine periodic benefit costs for years ended September 30:			
Discount rate - service cost	1.01	2.06	2.05
Discount rate - interest cost	0.56	1.53	1.49
Rate of compensation increase	2.50	2.50	2.50

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, 2020 and 2019, 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, 2019 and 2018 benefit obligation, respectively, matched with separate cash flows for each future year.

Compensation increase assumptions, where applicable, are based upon historical experience and anticipated future management actions.

In determining the long-term rate of return on plan assets, Woodward assumes that the historical long-term compound growth rates of equity and fixed-income securities will predict the future returns of similar investments in the plan portfolio. Investment management and other fees paid out of the plan assets are factored into the determination of asset return assumptions.

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, 2020 were based on the Society of Actuaries (“SOA”) Pri-2012 Mortality Tables Report using the SOA’s Mortality Improvement Scale MP-2019 (“MP-2019”) and projected forward using a custom projection scale based on MP-2019 with a 5-year convergence period and a long-term rate of 0.75%. The projected benefit obligations in the United States as of September 30, 2019 were based on the 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, 2020, mortality assumptions in Japan were based on the Standard rates 2020 and mortality assumptions for the United Kingdom pension scheme were based on the Self-administered pension scheme (“SAPS”) S3 “all” tables with a projected 1.5% annual improvement rate. Compared to September 30, 2019, where mortality assumptions in Japan were based on the Standard rates 2014 and mortality assumptions for the United Kingdom pension scheme were based on the Self-administered pension scheme (“SAPS”) S2 “all” tables with a projected 1.5% annual improvement rate. As of September 30, 2020, and September 30, 2019, mortality assumptions in Germany were based on the Heubeck 2018 G mortality tables.

Net periodic benefit costs consist of the following components reflected as expense in Woodward’s Consolidated Statement of Earnings:

	Year Ended September 30,								
	United States			Other Countries			Total		
	2020	2019	2018	2020	2019	2018	2020	2019	2018
Service cost	\$ 1,659	\$ 1,451	\$ 1,643	\$ 2,865	\$ 2,036	\$ 1,124	\$ 4,524	\$ 3,487	\$ 2,767
Interest cost	5,590	6,384	6,004	1,278	1,906	1,526	6,868	8,290	7,530
Expected return on plan assets	(12,346)	(11,986)	(11,614)	(2,827)	(2,638)	(2,780)	(15,173)	(14,624)	(14,394)
Amortization of:									
Net losses	1,430	617	598	1,046	283	291	2,476	900	889
Net prior service cost	936	709	709	23	—	—	959	709	709
Net periodic (benefit) cost	<u>\$ (2,731)</u>	<u>\$ (2,825)</u>	<u>\$ (2,660)</u>	<u>\$ 2,385</u>	<u>\$ 1,587</u>	<u>\$ 161</u>	<u>\$ (346)</u>	<u>\$ (1,238)</u>	<u>\$ (2,499)</u>

The following tables provide a reconciliation of the changes in the projected benefit obligation and fair value of assets for the defined benefit pension plans:

	At or for the Year Ended September 30,					
	United States		Other Countries		Total	
	2020	2019	2020	2019	2020	2019
Changes in projected benefit obligation:						
Projected benefit obligation at beginning of year	\$ 175,595	\$ 150,032	\$ 121,535	\$ 103,485	\$ 297,130	\$ 253,517
Plan amendment	—	—	—	601	—	601
Service cost	1,659	1,451	2,865	2,036	4,524	3,487
Interest cost	5,590	6,384	1,278	1,906	6,868	8,290
Net actuarial losses (gains)	7,811	23,841	(4,841)	22,174	2,970	46,015
Contribution by participants	91	—	9	9	100	9
Benefits paid	(6,669)	(6,113)	(3,434)	(3,181)	(10,103)	(9,294)
Settlements	—	—	(476)	—	(476)	—
Foreign currency exchange rate changes	—	—	6,610	(5,495)	6,610	(5,495)
Projected benefit obligation at end of year	<u>\$ 184,077</u>	<u>\$ 175,595</u>	<u>\$ 123,546</u>	<u>\$ 121,535</u>	<u>\$ 307,623</u>	<u>\$ 297,130</u>
Changes in fair value of plan assets:						
Fair value of plan assets at beginning of year	\$ 170,556	\$ 165,342	\$ 63,577	\$ 62,380	\$ 234,133	\$ 227,722
Actual return on plan assets	37,577	11,327	576	5,121	38,153	16,448
Contributions by the Company	—	—	2,272	1,697	2,272	1,697
Contributions by plan participants	91	—	9	9	100	9
Benefits paid	(6,669)	(6,113)	(3,434)	(3,181)	(10,103)	(9,294)
Settlements	—	—	(476)	—	(476)	—
Foreign currency exchange rate changes	—	—	2,630	(2,449)	2,630	(2,449)
Fair value of plan assets at end of year	<u>\$ 201,555</u>	<u>\$ 170,556</u>	<u>\$ 65,154</u>	<u>\$ 63,577</u>	<u>\$ 266,709</u>	<u>\$ 234,133</u>
Net over/(under) funded status at end of year	<u>\$ 17,478</u>	<u>\$ (5,039)</u>	<u>\$ (58,392)</u>	<u>\$ (57,958)</u>	<u>\$ (40,914)</u>	<u>\$ (62,997)</u>

At September 30, 2020, the Company's defined benefit pension plans in the United Kingdom, Japan and Germany represented \$59,003, \$10,119 and \$54,424 of the total projected benefit obligation, respectively. At September 30, 2020, the United Kingdom and Japan pension plan assets represented \$53,557 and \$11,597 of the total fair value of all plan assets, respectively. The German pension plans are unfunded and have no plan assets.

The largest contributor to the net actuarial losses affecting the benefit obligation for the defined benefit pension plans in the United States is due to a decrease in the discount rate, partially offset by return on plan assets significantly exceeding expectations. The largest contributor to the net actuarial gains affecting the benefit obligation for the defined benefit pension plans in the United Kingdom, Japan, and Germany is due to an increase in the discount rate, partially offset by lower than expected return on plan assets.

The accumulated benefit obligations of the Company's defined benefit pension plans at September 30, 2020 was \$184,077 in the United States, \$58,198 in the United Kingdom, \$9,266 in Japan, and \$54,403 in Germany, and at September 30, 2019 was \$175,595 in the United States, \$56,389 in the United Kingdom, \$10,081 in Japan and \$51,908 in Germany.

	Plans with accumulated benefit obligation in excess of plan assets		Plans with accumulated benefit obligation less than plan assets	
	At September 30,		At September 30,	
	2020	2019	2020	2019
Projected benefit obligation	\$ (141,561)	\$ (286,495)	\$ (166,062)	\$ (10,635)
Accumulated benefit obligation	(140,623)	(284,368)	(165,321)	(9,605)
Fair value of plan assets	79,963	222,661	186,746	11,472

The following tables provide the amounts recognized in the statement of financial position and accumulated other comprehensive losses for the defined benefit pension plans:

	Year Ended September 30,					
	United States		Other Countries		Total	
	2020	2019	2020	2019	2020	2019
Amounts recognized in statement of financial position consist of:						
Other non-current assets	\$ 19,064	\$ —	\$ 1,476	\$ 838	\$ 20,540	\$ 838
Accrued liabilities	—	—	(1,059)	(1,539)	(1,059)	(1,539)
Other non-current liabilities	(1,586)	(5,039)	(58,809)	(57,256)	(60,395)	(62,295)
Net over/(under) funded status at end of year	<u>\$ 17,478</u>	<u>\$ (5,039)</u>	<u>\$ (58,392)</u>	<u>\$ (57,957)</u>	<u>\$ (40,914)</u>	<u>\$ (62,996)</u>
Amounts recognized in accumulated other comprehensive income consist of:						
Unrecognized net prior service cost	\$ 4,814	\$ 5,750	\$ 583	\$ 579	\$ 5,397	\$ 6,329
Unrecognized net losses	9,317	28,167	30,794	32,641	40,111	60,808
Total amounts recognized	14,131	33,917	31,377	33,220	45,508	67,137
Deferred taxes	(6,721)	(11,577)	(9,457)	(10,029)	(16,178)	(21,606)
Amounts recognized in accumulated other comprehensive income	<u>\$ 7,410</u>	<u>\$ 22,340</u>	<u>\$ 21,920</u>	<u>\$ 23,191</u>	<u>\$ 29,330</u>	<u>\$ 45,531</u>

The following table reconciles the changes in accumulated other comprehensive losses for the defined benefit pension plans:

	Year Ended September 30,					
	United States		Other Countries		Total	
	2020	2019	2020	2019	2020	2019
Accumulated other comprehensive losses at beginning of year	\$ 33,917	\$ 10,744	\$ 33,220	\$ 14,529	\$ 67,137	\$ 25,273
Net (gain) loss	(17,420)	24,499	(2,446)	19,691	(19,866)	44,190
Prior service cost due to plan amendment	—	—	—	601	—	601
Amortization of:						
Net losses	(1,430)	(617)	(1,046)	(283)	(2,476)	(900)
Prior service cost	(936)	(709)	(23)	—	(959)	(709)
Foreign currency exchange rate changes	—	—	1,672	(1,318)	1,672	(1,318)
Accumulated other comprehensive losses at end of year	<u>\$ 14,131</u>	<u>\$ 33,917</u>	<u>\$ 31,377</u>	<u>\$ 33,220</u>	<u>\$ 45,508</u>	<u>\$ 67,137</u>

Pension benefit payments are made from the assets of the pension plans. The German pension plans are unfunded; therefore, benefit payments are made from Company contributions into these plans as required to meet the payment obligations. Using foreign exchange rates as of September 30, 2020 and expected future service assumptions, it is anticipated that the future benefit payments will be as follows:

Year Ending September 30,	United States	Other Countries	Total
2021	\$ 7,650	\$ 3,493	\$ 11,143
2022	8,280	3,347	11,627
2023	8,809	3,952	12,761
2024	9,283	3,841	13,124
2025	9,647	3,792	13,439
2026 – 2030	51,942	20,898	72,840

Woodward expects its pension plan contributions in fiscal year 2021 will be \$689 in the United Kingdom, \$219 in Japan and \$1,021 in Germany. Woodward expects to have no pension plan contributions in fiscal year 2021 in the United States.

Pension plan assets

The overall investment objective of the pension plan assets is to earn a rate of return over time which, when combined with Company contributions, satisfies the benefit obligations of the pension plans and maintains sufficient liquidity to pay benefits.

As the timing and nature of the plan obligations varies for each Company sponsored pension plan, investment strategies have been individually designed for each pension plan with a common focus on maintaining diversified investment portfolios that provide for long-term growth while minimizing the risk to principal associated with short-term market behavior. The strategy for each of the plans balances the requirements to generate returns, using investments expected to produce higher returns, such as equity securities, with the need to control risk within the pension plans using less volatile investment assets, such as debt securities. A strategy of more equity-oriented allocation is adopted for those plans which have a longer-term investment plan based on the timing of the associated benefit obligations.

A pension oversight committee is assigned by the Company to each pension plan. Among other responsibilities, each committee is responsible for all asset class allocation decisions. Asset class allocations, which are reviewed by the respective pension committee on at least an annual basis, are designed to meet or exceed certain market benchmarks and align with each plan's investment objectives. In evaluating the asset allocation choices, consideration is given to the proper long-term level of risk for each plan, particularly with respect to the long-term nature of each plan's liabilities, the impact of asset allocation on investment results and the corresponding impact on the volatility and magnitude of plan contributions and expense and the impact certain actuarial techniques may have on the plans' recognition of investment experience. From time to time, the plans may move outside the prescribed asset class allocation in order to meet significant liabilities with respect to one or more individuals approaching retirement.

Risks associated with the plan assets include interest rate fluctuation risk, market fluctuation risk, risk of default by debt issuers and liquidity risk. To manage these risks, the assets are managed by established, professional investment firms and performance is evaluated regularly by the Company's pension oversight committee against specific benchmarks and each plan's investment objectives. Liability management and asset class diversification are central to the Company's risk management approach and overall investment strategy.

The assets of the U.S. plans are invested in actively managed mutual funds. The assets of the plans in the United Kingdom and Japan are invested in actively managed pooled investment funds. Each individual mutual fund or pooled investment fund has been selected based on the investment strategy of the related plan, which mirrors a specific asset class within the associated target allocation. The plans in Germany are unfunded and have no plan assets. Pension plan assets at September 30, 2020 and 2019 do not include any direct investment in Woodward's common stock.

The asset allocations are monitored and rebalanced regularly by investment managers assigned to the individual pension plans. The actual allocations of pension plan assets and target allocation ranges by asset class, are as follows:

	At September 30,								
	2020				2019				
Asset Class	Percentage of Plan Assets	Target Allocation Ranges		Percentage of Plan Assets	Target Allocation Ranges				
United States:									
Asset Class									
Equity Securities	64.4%	41.7%	—	81.7%	60.6%	41.4%	—	81.4%	
Debt Securities	35.0%	28.3%	—	48.3%	37.9%	28.6%	—	48.6%	
Other	0.6%	0.0%			1.5%	0.0%			
	100.0%				100.0%				
United Kingdom:									
Asset Class									
Equity Securities	39.6%	50.0%	—	90.0%	41.6%	30.0%	—	60.0%	
Debt Securities	60.1%	45.0%	—	70.0%	57.8%	45.0%	—	70.0%	
Other	0.3%	0.0%			0.6%	0.0%			
	100.0%				100.0%				
Japan:									
Asset Class									
Equity Securities	39.7%	36.0%	—	44.0%	41.4%	36.0%	—	44.0%	
Debt Securities	59.4%	55.0%	—	63.0%	57.7%	55.0%	—	63.0%	
Other	0.9%	0.0%		2.0%	0.9%	0.0%		2.0%	
	100.0%				100.0%				

Actual allocations to each asset class can vary from target allocations due to periodic market value fluctuations, investment strategy changes, and the timing of benefit payments and contributions.

The following table presents Woodward's pension plan assets using the fair value hierarchy established by U.S. GAAP as of September 30, 2020 and September 30, 2019.

Asset Category:	At September 30, 2020							Total
	Level 1		Level 2		Level 3			
	United States	Other Countries	United States	Other Countries	United States	Other Countries		
Cash and cash equivalents	\$ 1,115	\$ 270	\$ —	\$ —	\$ —	\$ —	\$ 1,385	
Mutual funds:								
U.S. corporate bond fund	70,492	—	—	—	—	—	70,492	
U.S. equity large cap fund	65,025	—	—	—	—	—	65,025	
International equity large cap growth fund	64,923	—	—	—	—	—	64,923	
Pooled funds:								
Japanese equity securities	—	—	—	2,470	—	—	2,470	
International equity securities	—	—	—	2,135	—	—	2,135	
Japanese fixed income securities	—	—	—	5,151	—	—	5,151	
International fixed income securities	—	—	—	1,734	—	—	1,734	
Global target return equity/bond fund	—	—	—	13,002	—	—	13,002	
Index linked U.K. equity fund	—	—	—	2,878	—	—	2,878	
Index linked international equity fund	—	—	—	5,351	—	—	5,351	
Index linked U.K. corporate bonds fund	—	—	—	18,055	—	—	18,055	
Index linked U.K. government securities fund	—	—	—	5,767	—	—	5,767	
Index linked U.K. long-term government securities fund	—	—	—	8,341	—	—	8,341	
Total assets	\$201,555	\$ 270	\$ —	\$ 64,884	\$ —	\$ —	\$266,709	

Asset Category:	At September 30, 2019							Total
	Level 1		Level 2		Level 3			
	United States	Other Countries	United States	Other Countries	United States	Other Countries		
Cash and cash equivalents	\$ 2,568	\$ 418	\$ —	\$ —	\$ —	\$ —	\$ 2,986	
Mutual funds:								
U.S. corporate bond fund	64,514	—	—	—	—	—	64,514	
U.S. equity large cap fund	56,829	—	—	—	—	—	56,829	
International equity large cap growth fund	46,645	—	—	—	—	—	46,645	
Pooled funds:								
Japanese equity securities	—	—	—	2,518	—	—	2,518	
International equity securities	—	—	—	2,226	—	—	2,226	
Japanese fixed income securities	—	—	—	4,915	—	—	4,915	
International fixed income securities	—	—	—	1,710	—	—	1,710	
Global target return equity/bond fund	—	—	—	12,488	—	—	12,488	
Index linked U.K. equity fund	—	—	—	3,738	—	—	3,738	
Index linked international equity fund	—	—	—	5,438	—	—	5,438	
Index linked U.K. corporate bonds fund	—	—	—	16,737	—	—	16,737	
Index linked U.K. government securities fund	—	—	—	5,491	—	—	5,491	
Index linked U.K. long-term government securities fund	—	—	—	7,898	—	—	7,898	
Total assets	\$170,556	\$ 418	\$ —	\$ 63,159	\$ —	\$ —	\$234,133	

Cash and cash equivalents: Cash and cash equivalents held by the Company's pension plans are held on deposit with creditworthy financial institutions. The fair value of the cash and cash equivalents are based on the quoted market price of the respective currency in which the cash is maintained.

Pension assets invested in mutual funds: The assets of the Company's U.S. pension plans are invested in various mutual funds which invest in both equity and debt securities. The fair value of the mutual funds is determined based on the quoted market price of each fund.

Pension assets invested in pooled funds: The assets of the Company’s Japan and United Kingdom pension plans are invested in pooled investment funds, which include both equity and debt securities. The assets of the United Kingdom pension plan are invested in index-linked pooled funds which aim to replicate the movements of an underlying market index to which the fund is linked. Fair value of the pooled funds is based on the net asset value of shares held by the plan as reported by the fund sponsors. All pooled funds held by plans outside of the United States are considered to be invested in international equity and debt securities. Although the underlying securities may be largely domestic to the plan holding the investment assets, the underlying assets are considered international from the perspective of the Company.

There were no transfers into or out of Level 3 assets in fiscal years 2020 or 2019.

Other postretirement benefit plans

Woodward provides other postretirement benefits to its employees including postretirement medical benefits and life insurance benefits. Postretirement medical benefits are provided to certain current and retired employees and their covered dependents and beneficiaries in the United States and the United Kingdom. Benefits include the option to elect company provided medical insurance coverage to age 65 and a Medicare supplemental plan after age 65. Life insurance benefits are also provided to certain retirees in the United States under frozen plans which are no longer available to current employees. A September 30 measurement date is utilized to value plan assets and obligations for Woodward’s other postretirement benefit plans.

The postretirement medical benefit plans, other than the plan assumed in an acquisition in fiscal year 2009, were frozen in fiscal year 2006 and no additional employees may participate in the plans. Generally, employees who had attained age 55 and had rendered 10 or more years of service before the plans were frozen were eligible for these postretirement medical benefits.

Certain participating retirees are required to contribute to the plans in order to maintain coverage. The plans provide postretirement medical benefits for approximately 455 retired employees and their covered dependents and beneficiaries and may provide future benefits to 8 active employees and their covered dependents and beneficiaries, upon retirement, if the employees elect to participate. All the postretirement medical plans are fully insured for retirees who have attained age 65.

The actuarial assumptions used in measuring the net periodic benefit cost and plan obligations of postretirement benefits were as follows:

	2020	2019	2018
Weighted-average discount rate used to determine benefit obligation at September 30	2.45%	3.05%	4.30%
Weighted-average discount rate used to determine net periodic benefit cost for years ended September 30	3.05	4.30	3.80

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 used 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, 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.

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, 2020 were based on the SOA Pri-2012 Mortality Tables Report using the SOA’s MP-2019 and projected forward using a custom projection scale based on MP-2019 with a 5-year convergence period and a long-term rate of 0.75%. The projected benefit obligations in the United States as of September 30, 2019 were based on the SOA’s RP-2014 Mortality Tables Report projected back to 2006 using the SOA’s 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, 2020, mortality assumptions for the United Kingdom postretirement medical plan were based on the SAP S3 “all” tables with a projected 1.5% annual improvement rate, whereas of September 30, 2019 mortality assumptions for the United Kingdom postretirement medical plan were based on the SAP S2 “all” tables with a projected 1.5% annual improvement rate.

Assumed healthcare cost trend rates at September 30, were as follows:

	2020	2019
Health care cost trend rate assumed for next year	6.00%	6.25%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	5.00%	5.00%
Year that the rate reaches the ultimate trend rate	2025	2025

Net periodic benefit costs consist of the following components reflected as expense in Woodward's Consolidated Statements of Earnings:

	Year Ended September 30,		
	2020	2019	2018
Service cost	\$ 2	\$ 5	\$ 7
Interest cost	782	1,154	1,165
Amortization of:			
Net losses	47	55	94
Net prior service cost (benefit)	3	(5)	(158)
Curtailment gain	—	—	(330)
Net periodic cost	<u>\$ 834</u>	<u>\$ 1,209</u>	<u>\$ 778</u>

The following table provides a reconciliation of the changes in the accumulated postretirement benefit obligation and fair value of assets for the postretirement benefits for the fiscal years ended September 30:

	Year Ended September 30,	
	2020	2019
Changes in accumulated postretirement benefit obligation:		
Accumulated postretirement benefit obligation at beginning of year	\$ 26,671	\$ 27,985
Service cost	2	5
Interest cost	782	1,154
Premiums paid by plan participants	1,088	1,192
Net actuarial gains	(313)	(373)
Benefits paid	(2,785)	(3,292)
Accumulated postretirement benefit obligation at end of year	<u>\$ 25,445</u>	<u>\$ 26,671</u>
Changes in fair value of plan assets:		
Fair value of plan assets at beginning of year	\$ —	\$ —
Contributions by the company	1,697	2,100
Premiums paid by plan participants	1,088	1,192
Benefits paid	(2,785)	(3,292)
Fair value of plan assets at end of year	<u>\$ —</u>	<u>\$ —</u>
Funded status at end of year	<u>\$ (25,445)</u>	<u>\$ (26,671)</u>

The following tables provide the amounts recognized in the statement of financial position and accumulated other comprehensive losses for the postretirement plans:

	Year Ended September 30,	
	2020	2019
Amounts recognized in statement of financial position consist of:		
Accrued liabilities	\$ (1,992)	\$ (2,048)
Other non-current liabilities	(23,453)	(24,623)
Funded status at end of year	<u>\$ (25,445)</u>	<u>\$ (26,671)</u>
Amounts recognized in accumulated other comprehensive income consist of:		
Unrecognized net prior service cost (benefit)	\$ 1	\$ 4
Unrecognized net gains	(363)	(3)
Total amounts recognized	(362)	1
Deferred taxes	(324)	(414)
Amounts recognized in accumulated other comprehensive income	<u>\$ (686)</u>	<u>\$ (413)</u>

Woodward pays plan benefits from its general funds; therefore, there are no segregated plan assets as of September 30, 2020 or September 30, 2019.

The accumulated benefit obligations of the Company's postretirement plans were \$25,445 at September 30, 2020 and \$26,671 at September 30, 2019. The largest contributor to the actuarial gains affecting the Company's postretirement plans accumulated benefit obligations were the claims experience being lower than expected and the adoption of updated mortality tables, partially offset by the decrease in discount rate and actual participant benefits paid.

The following table reconciles the changes in accumulated other comprehensive losses for the other postretirement benefit plans:

	Year Ended September 30,	
	2020	2019
Accumulated other comprehensive losses at beginning of year	\$ 1	\$ 424
Net gain	(313)	(373)
Curtailment arising during the period	—	—
Amortization of:		
Net losses	(47)	(55)
Prior service (cost) benefit	(3)	5
Accumulated other comprehensive losses at end of year	<u>\$ (362)</u>	<u>\$ 1</u>

Using foreign currency exchange rates as of September 30, 2020 and expected future service, it is anticipated that the future Company contributions to pay benefits, excluding participate contributions, will be as follows:

Year Ending September 30,		
2021	\$	3,113
2022		3,078
2023		3,017
2024		2,949
2025		2,867
2026 – 2030		12,690

Multiemployer defined benefit plans

Woodward operates multiemployer defined benefit plans for certain employees in both the Netherlands and Japan. The amounts of contributions associated with the multiemployer defined benefit plans were as follows:

	Year Ended September 30,		
	2020	2019	2018
Company contributions	\$ 417	\$ 252	\$ 334

The plan in the Netherlands is a quasi-mandatory plan that covers all of Woodward's employees in the Netherlands and is part of the Dutch national pension system.

The Company may elect to withdraw from its multiemployer plan in Japan, although it has no plans to do so. If the Company elects to withdraw from the Japanese plan, it would incur an immaterial one-time contribution cost. Changes in Japanese regulations could trigger reorganization of or abolishment of the Japanese multiemployer plan, which could impact future funding levels.

Note 22. Stockholders' equity

Common Stock

Holders of Woodward's common stock are entitled to receive dividends when and as declared by Woodward's board of directors and have the right to one vote per share on all matters requiring stockholder approval.

Dividends declared and paid during 2020, 2019 and 2018 fiscal years were:

	Year Ended September 30,		
	2020	2019	2018
Dividends declared and paid	\$ 37,664	\$ 39,066	\$ 34,003
Dividend per share amount	0.6050	0.6300	0.5525

Stock repurchase program

In the first quarter of fiscal year 2017, Woodward’s 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 ended in November 2019 (the “2017 Authorization”). Effective upon the expiration of the 2017 Authorization in November 2019, Woodward’s board of directors approved 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 2022 (the “2019 Authorization”). In fiscal year 2020, Woodward purchased 124 shares of its common stock for \$13,346 under the 2019 Authorization. In fiscal year 2019, Woodward repurchased 1,102 shares of common stock for \$110,311 under the 2017 Authorization. Woodward repurchased no common stock in fiscal year 2018 under the 2017 Authorization.

Stock-based compensation

Non-qualified stock option awards and restricted stock awards are granted to key management members and directors of the Company. The grant date for these awards is used for the measurement date. Vesting would be accelerated in the event of retirement, disability, or death of a participant, or change in control of the Company, as defined in the individual stock option agreements. These awards are valued as of the measurement date and are amortized on a straight-line basis over the requisite vesting period for all awards, including awards with graded vesting. Stock for exercised stock options and for restricted stock awards is issued from treasury stock shares.

Provisions governing outstanding stock option awards are included in the 2017 Omnibus Incentive Plan, as amended from time to time (the “2017 Plan”) and the 2006 Omnibus Incentive Plan (the “2006 Plan”), as applicable.

The 2017 Plan was approved by Woodward’s stockholders in January 2017 and is a successor plan to the 2006 Plan. As of September 14, 2016, the effective date of the 2017 Plan, Woodward’s board of directors delegated authority to administer the 2017 Plan to the compensation committee of the board of directors (the “Committee”), including, but not limited to, the power to determine the recipients of awards and the terms of those awards. On January 29, 2020, Woodward’s stockholders approved an additional 1,000 shares of Woodward’s common stock to be made available for future grants. Under the 2017 Plan, there were approximately 1,972 shares of Woodward’s common stock available for future grants as of September 30, 2020.

Stock options

Woodward believes that stock options align the interests of its employees and directors with the interests of its stockholders. Stock option awards are granted with an exercise price equal to the market price of Woodward’s stock at the date the grants are awarded, a ten year term, and generally have a four year vesting schedule at a rate of 25% per year.

The fair value of options granted is estimated as of the grant date using the Black-Scholes-Merton option-valuation model using the assumptions in the following table. Woodward calculates the expected term, which represents the average period of time that stock options granted are expected to be outstanding, based upon historical experience of plan participants. Expected volatility is based on historical volatility using daily stock price observations. The estimated dividend yield is based upon Woodward’s historical dividend practice and the market value of its common stock. The risk-free rate is based on the U.S. treasury yield curve, for periods within the contractual life of the stock option, at the time of grant.

	Year Ended September 30,					
	2020		2019		2018	
Weighted-average exercise price per share	\$	90.52		79.84		78.91
Weighted-average grant date market value of Woodward stock	\$	90.52		79.84		78.91
Expected term (years)		6.4 - 8.7		6.5 - 8.7		6.4 - 8.7
Estimated volatility		25.7% - 35.1%		25.7% - 31.0%		29.1% - 32.7%
Estimated dividend yield		0.4% - 0.9%		0.6% - 0.8%		0.6% - 0.8%
Risk-free interest rate		0.4% - 1.7%		1.5% - 3.1%		2.1% - 2.8%

The weighted average grant date fair value of options granted follows:

	Year Ended September 30,		
	2020	2019	2018
Weighted-average grant date fair value of options	\$ 25.41	\$ 24.12	\$ 25.66

The following is a summary of the activity for stock option awards during the fiscal year ended September 30, 2020:

	<u>Number</u>	<u>Weighted- Average Exercise Price Per Share</u>
Balance at September 30, 2019	5,387	\$ 53.73
Options granted	912	90.52
Options exercised	(756)	33.26
Options forfeited	(94)	95.55
Options expired	(6)	72.79
Balance at September 30, 2020	<u>5,443</u>	<u>62.00</u>

Exercise prices of stock options outstanding as of September 30, 2020 range from \$25.57 to \$127.84.

Changes in non-vested stock options during the fiscal year ended September 30, 2020 were as follows:

	<u>Number</u>	<u>Weighted- Average Grant Date Fair Value Per Share</u>
Balance at September 30, 2019	2,068	\$ 23.43
Options granted	912	25.41
Options vested	(808)	21.57
Options forfeited	(94)	26.84
Balance at September 30, 2020	<u>2,078</u>	<u>24.69</u>

Information about stock options that have vested, or are expected to vest, and are exercisable at September 30, 2020 was as follows:

	<u>Number</u>	<u>Weighted- Average Exercise Price</u>	<u>Weighted- Average Remaining Life in Years</u>	<u>Aggregate Intrinsic Value</u>
Options outstanding	5,443	\$ 62.00	6.0	\$ 114,139
Options vested and exercisable	3,365	49.63	4.6	103,059
Options vested and expected to vest	5,362	61.72	5.9	113,399

Other information follows:

	<u>Year Ended September 30,</u>		
	<u>2020</u>	<u>2019</u>	<u>2018</u>
Total fair value of stock options vested	\$ 17,423	\$ 15,863	\$ 13,944
Total intrinsic value of options exercised	50,059	70,866	16,690
Cash received from exercises of stock options	24,969	36,044	9,132
Excess tax benefit realized from exercise of stock options	9,399	13,416	3,524

Restricted stock units

Restricted stock units have been granted to certain employees of L'Orange (at acquisition) and other current Woodward members in key management positions. Each restricted stock unit entitles the holder to one share of the Company's common stock upon vesting. The restricted stock units were granted with a two year vesting schedule and vest on the one and two year anniversaries of the grant date at a rate of 50% per year. The restricted stock units do not participate in dividends during the vesting period. The fair value of restricted stock units granted were estimated using the closing price of Woodward common stock on the grant date.

A summary of the activity for restricted stock units in the fiscal year ended September 30, 2020:

	Number	Weighted-Average Grant Date Fair Value per Unit
Balance at September 30, 2019	9	\$ 91.55
Units granted	—	n/a
Units vested	(7)	87.30
Units forfeited	—	n/a
Balance at September 30, 2020	<u>2</u>	<u>103.53</u>

Stock-based compensation expense

Woodward recognizes stock-based compensation expense on a straight-line basis over the requisite service period. Pursuant to form stock option agreements used by the Company, with terms approved by the administrator of the applicable plan, the requisite service period can be less than the four year vesting period based on grantee's retirement eligibility. As such, the recognition of stock-based compensation expense associated with some stock option grants can be accelerated to a period of less than four years, including immediate recognition of stock-based compensation expense on the date of grant.

Stock-based compensation expense recognized was as follows:

	Year Ended September 30,		
	2020	2019	2018
Employee stock-based compensation expense	\$ 22,903	\$ 18,146	\$ 18,229

At September 30, 2020, there was approximately \$10,302 of total unrecognized compensation expense related to non-vested stock-based compensation arrangements, including both stock options and restricted stock awards. The pre-vesting forfeiture rates for purposes of determining stock-based compensation expense recognized were estimated to be 0% for members of Woodward's board of directors and 9% for all others. The remaining unrecognized compensation cost is expected to be recognized over a weighted-average period of approximately 1.9 years.

Preferred stock rights

On April 5, 2020, the Board declared a dividend distribution of one right (a "Right") for each outstanding share of common stock of the Company to stockholders of record as of the close of business on April 16, 2020 (the "Record Date"). Each Right entitles the registered holder, upon the occurrence of specified events, to purchase from the Company one one thousandth of a share of Series B Participating Preferred Stock, par value \$0.003 per share (the "Preferred Stock"), of the Company at an exercise price of \$480.00 (the "Exercise Price"). In addition, each Right entitles the registered holder (other than any person or group that acquires 15% or more of the Company's common stock without the approval of the Board), following the occurrence of other specified events, to purchase common stock of the Company or stock of any acquirer of the Company at a substantial discount. The complete terms of the Rights are set forth in a Preferred Stock Rights Agreement (the "Rights Agreement"), dated as of April 5, 2020, between the Company and American Stock Transfer & Trust Company, LLC, as rights agent.

The Board adopted the Rights Agreement to protect stockholders from coercive or otherwise unfair takeover tactics. In general terms, it works by imposing a significant penalty upon any person or group that acquires 15% or more of the common stock of the Company without the approval of the Board. As a result, the overall effect of the Rights Agreement and the issuance of the Rights may be to render more difficult or discourage a merger, tender or exchange offer or other business combination involving the Company that is not approved by the Board. However, neither the Rights Agreement nor the Rights should interfere with any merger, tender or exchange offer, or other business combination approved by the Board.

The Rights expire on the earliest of (i) on April 5, 2021 (unless such date is extended) or (ii) the redemption or exchange of the Rights pursuant to the Rights Agreement.

Note 23. Commitments and contingencies

Woodward enters into unconditional purchase obligation arrangements (i.e. issuance of purchase orders, obligations to transfer funds in the future for fixed or minimum quantities of goods or services at fixed or minimum prices, such as "take-or-

pay" contracts) in the normal course of business to ensure that adequate levels of sourced product are available to Woodward. Future minimum unconditional purchase obligations are as follows:

Year Ending September 30,	
2021	\$ 343,480
2022	49,457
2023	6,389
2024	27,308
2025	1,859
Thereafter	1,811
Total	\$ 430,304

The U.S. Government, and other governments, may terminate any of Woodward's government contracts (and, in general, subcontracts) at their convenience, as well as for default based on specified performance measurements. If any of Woodward's government contracts were to be terminated for convenience, the Company generally would be entitled to receive payment for work completed and allowable termination or cancellation costs. If any of Woodward's government contracts were to be terminated for Woodward's default, the U.S. Government generally would pay only for the work accepted, and could require Woodward 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 Woodward liable for damages resulting from the default.

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.

Legal costs are expensed as incurred and are classified in "Selling, general and administrative expenses" on the Consolidated Statements of Earnings.

Woodward is partially self-insured in the United States for healthcare and worker's compensation up to predetermined amounts, above which third party insurance applies. Management regularly reviews the probable outcome of related claims and proceedings, the expenses expected to be incurred, the availability and limits of the insurance coverage, and the established accruals for liabilities.

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.

In the event of a change in control of Woodward, as defined in change-in-control agreements with its current corporate officers, Woodward may be required to pay termination benefits to any such officer if such officer's employment is terminated within two years following the change of control.

On April 9, 2019, Senvion, a German wind turbine manufacturer and a significant customer of Woodward's renewables business, announced that it filed for self-administration insolvency proceedings and declared it would be exploring options for the sale or partial liquidation of the company. On September 16, 2019, Senvion agreed on exclusive talks with Siemens Gamesa over the sale of a substantial part of its business consisting of certain services and onshore assets in Europe. Concurrent with this announcement, Woodward management concluded that the remainder of the Senvion business would not emerge from insolvency and therefore, in the fourth quarter of fiscal year 2019, Woodward impaired all of its accounts receivable from Senvion as well as inventory and certain other current assets held specifically for Senvion programs. The total amount of the impairment charged to both selling, general and administrative and cost of goods sold in the fourth quarter of fiscal year 2019 was \$12,601.

Note 24. Segment information

Woodward serves the aerospace and industrial markets through its two reportable segments - Aerospace and Industrial. When appropriate, Woodward's reportable segments are aggregations of Woodward's operating segments. Woodward uses operating segment information internally to manage its business, including the assessment of operating segment performance and decisions for the allocation of resources between operating segments. Woodward L'Orange has been included in Woodward's Industrial segment results since the closing of the L'Orange Acquisition.

The accounting policies of the reportable segments are the same as those of the Company. Woodward evaluates segment profit or loss based on internal performance measures for each segment in a given period. In connection with that

assessment, Woodward generally excludes matters such as certain charges for restructuring, interest income and expense, certain gains and losses from asset dispositions, or other non-recurring and/or non-operationally related expenses.

A summary of consolidated net sales and earnings by segment follows:

	Year Ended September 30,		
	2020	2019	2018
Segment external net sales:			
Aerospace	\$ 1,590,963	\$ 1,880,520	\$ 1,557,988
Industrial	904,702	1,019,677	767,885
Total consolidated net sales	<u>\$ 2,495,665</u>	<u>\$ 2,900,197</u>	<u>\$ 2,325,873</u>
Segment earnings:			
Aerospace	\$ 310,137	\$ 389,126	\$ 308,553
Industrial	100,321	93,521	49,894
Nonsegment expenses (1)	(94,530)	(119,447)	(100,078)
Interest Expense, net	(34,047)	(42,588)	(38,791)
Consolidated earnings before income taxes	<u>\$ 281,881</u>	<u>\$ 320,612</u>	<u>\$ 219,578</u>

(1) Nonsegment expenses for the fiscal year ended September 30, 2020 and September 30, 2018 includes restructuring charges of \$22,216 and \$17,013, respectively. See Note 17, *Accrued liabilities* for further details.

Segment assets consist of accounts receivable, inventories, property, plant, and equipment, net, goodwill, and other intangibles, net. A summary of consolidated total assets, consolidated depreciation and amortization, and consolidated capital expenditures follows:

	Year Ended September 30,		
	2020	2019	2018
Segment assets:			
Aerospace	\$ 1,752,516	\$ 1,900,657	\$ 1,805,892
Industrial	1,529,411	1,561,441	1,642,462
Unallocated corporate property, plant and equipment, net	106,380	114,887	102,083
Other unallocated assets	515,029	379,541	240,212
Consolidated total assets	<u>\$ 3,903,336</u>	<u>\$ 3,956,526</u>	<u>\$ 3,790,649</u>
Segment depreciation and amortization:			
Aerospace	\$ 63,530	\$ 60,710	\$ 54,828
Industrial	57,444	71,173	51,695
Unallocated corporate amounts	10,184	10,121	9,608
Consolidated depreciation and amortization	<u>\$ 131,158</u>	<u>\$ 142,004</u>	<u>\$ 116,131</u>
Segment capital expenditures:			
Aerospace	\$ 26,148	\$ 56,525	\$ 98,358
Industrial	10,631	30,195	17,109
Unallocated corporate amounts	10,308	12,346	11,673
Consolidated capital expenditures	<u>\$ 47,087</u>	<u>\$ 99,066</u>	<u>\$ 127,140</u>

Sales to Boeing were made by Woodward's Aerospace segment and totaled approximately 14% of net sales in fiscal year 2020, 15% of net sales in fiscal year 2019, and 12% of net sales in fiscal year 2018. Sales to GE were made by both of Woodward's reportable segments and totaled approximately 11% of net sales in fiscal year 2020, 14% of net sales in fiscal year 2019, and 16% of net sales in fiscal year 2018.

Accounts receivable from Boeing totaled approximately 13% of accounts receivable at September 30, 2020 and 14% of accounts receivable at September 30, 2019. Accounts receivable from GE totaled approximately 9% of accounts receivable at September 30, 2020 and 8% of accounts receivable at and September 30, 2019.

U.S. Government related sales from Woodward's reportable segments were as follows:

	Direct U.S. Government Sales	Indirect U.S. Government Sales	Total U.S. Government Related Sales
Fiscal year ended September 30, 2020			
Aerospace	\$ 149,416	\$ 536,424	\$ 685,840
Industrial	5,867	17,473	23,340
Total net external sales	<u>\$ 155,283</u>	<u>\$ 553,897</u>	<u>\$ 709,180</u>
Percentage of total net sales	<u>6%</u>	<u>22%</u>	<u>28%</u>
Fiscal year ended September 30, 2019			
Aerospace	\$ 118,334	\$ 545,306	\$ 663,640
Industrial	4,491	13,810	18,301
Total net external sales	<u>\$ 122,825</u>	<u>\$ 559,116</u>	<u>\$ 681,941</u>
Percentage of total net sales	<u>4%</u>	<u>19%</u>	<u>23%</u>
Fiscal year ended September 30, 2018			
Aerospace	\$ 84,252	\$ 429,386	\$ 513,638
Industrial	2,547	8,658	11,205
Total net external sales	<u>\$ 86,799</u>	<u>\$ 438,044</u>	<u>\$ 524,843</u>
Percentage of total net sales	<u>4%</u>	<u>19%</u>	<u>23%</u>

For net sales by geographical area for the year ended September 30, 2020 and 2019, refer to Note 3, *Revenue*. Net sales by geographical area for the year ended September 30, 2018, as determined by the location of the customer invoiced, were as follows:

	<u>Year Ended September 30,</u> <u>2018</u>
United States	\$ 1,350,708
Germany	230,834
Europe, excluding Germany	323,109
Asia	283,031
Other countries	138,191
Consolidated net sales	<u>\$ 2,325,873</u>

Property, plant, and equipment, net by geographical area, as determined by the physical location of the assets, were as follows:

	<u>At September 30,</u>	
	<u>2020</u>	<u>2019</u>
United States	\$ 885,501	\$ 926,370
Germany	89,826	107,975
Other countries	22,088	24,430
Consolidated property, plant and equipment, net	<u>\$ 997,415</u>	<u>\$ 1,058,775</u>

Note 25. Supplemental quarterly financial data (unaudited)

Quarterly results for the fiscal years ended September 30, 2020 and September 30, 2019 follow:

	<u>2020 Fiscal Quarters</u>			
	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>
Net sales	\$ 720,355	\$ 720,220	\$ 523,826	\$ 531,264
Gross margin (1)	185,438	202,706	128,315	123,784
Earnings before income taxes (2)(3)(4)(5)	61,548	107,199	45,016	68,118
Net earnings (2)(3)(4)(5)	53,373	91,318	38,465	57,239
Earnings per share				
Basic earnings per share (2)(3)(4)(5)	0.86	1.47	0.62	0.92
Diluted earnings per share (2)(3)(4)(5)	0.83	1.41	0.61	0.89
Cash dividends per share	0.1625	0.2800	0.0813	0.0813

	2019 Fiscal Quarters			
	First	Second	Third	Fourth
Net sales	\$ 652,811	\$ 758,844	\$ 752,005	\$ 736,537
Gross margin (1)(6)(7)	160,637	192,003	189,489	165,414
Earnings before income taxes (6)(7)(8)	61,515	90,168	92,314	76,615
Net earnings (6)(7)(8)(9)	49,120	77,579	66,107	66,796
Earnings per share				
Basic earnings per share (6)(7)(8)(9)	0.79	1.25	1.07	1.08
Diluted earnings per share (6)(7)(8)(9)	0.77	1.20	1.02	1.03
Cash dividends per share	0.1425	0.1625	0.1625	0.1625

Notes:

1. Gross margin represents net sales less cost of goods sold.
2. Associated with our decision to relocate our Duarte, California operations to the newly renovated Drake Campus in Fort Collins, Colorado, we closed on the sale of our Duarte real property and recorded a pre-tax gain on sale of assets in the amount of \$13,522 in the first quarter of fiscal year 2020 and \$8,801 in the fourth quarter of fiscal year 2020.
3. In the first quarter of fiscal year 2020, Woodward approved a plan to divest the disposal group, which resulted in the recognition of the associated assets and liabilities as held for sale. Concurrently, Woodward determined that the assets held for sale, net of any liabilities held for sale, were impaired and recognized a non-cash impairment charge of \$37,902, representing the write down of the associated net assets held for sale to their fair market value as of December 31, 2019.
4. Results in the third and fourth quarter of fiscal year 2020 include pre-tax restructuring charges totaling \$19,040 and \$3,176, respectively, which relate to the Company's response to the ongoing global economic challenges resulting from the COVID-19 pandemic and its impact on the Company's business.
5. In the third quarter of fiscal year 2020, as a result of the COVID-19 pandemic and future cash flow uncertainties, Woodward elected to terminate and settle its existing cross-currency interest rate swap derivative instruments. Concurrent with settlement of the derivative instruments, Woodward discontinued the related foreign currency hedging relationships associated with the instruments. As a result of the termination of the instruments, and related hedging relationships, a pre-tax gain of \$30,481 and swap breakage fee of \$3,000 were recorded.
6. Results for the fourth quarter of fiscal year 2019 include pre-tax, non-cash charges of \$12,601 related to the impairment of receivables, inventory and certain other assets in connection with Servion, a significant customer of Woodward renewables business, which declared insolvency in fiscal year 2019.
7. Results for the first through third quarters of fiscal year 2019 include pre-tax non-cash charges of \$9,511, \$8,985, \$2,604, respectively. These costs are associated with 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.
8. Results for the first through fourth quarters of fiscal year 2019 include, pre-tax Duarte move related costs of \$6,963, \$9,161, \$7,035, and \$3,930, respectively.
9. In the third quarter of fiscal year 2019, Woodward recognized additional income tax expense of \$10,588 related to the repatriation tax on deferred foreign income related to the December 2017 U.S. Tax legislation.

	2020 Fiscal Quarters			
	First	Second	Third	Fourth
Segment external net sales:				
Aerospace	\$ 473,925	\$ 474,236	\$ 306,494	\$ 336,308
Industrial	246,430	245,984	217,332	194,956
Total	<u>\$ 720,355</u>	<u>\$ 720,220</u>	<u>\$ 523,826</u>	<u>\$ 531,264</u>
Segment earnings:				
Aerospace	\$ 92,911	\$ 117,638	\$ 41,096	\$ 58,492
Industrial	28,230	25,972	27,438	18,681
Nonsegment expenses (1)(2)(3)(4)	(51,071)	(28,131)	(15,158)	(170)
Interest expense, net	(8,522)	(8,280)	(8,360)	(8,885)
Consolidated earnings before income taxes	<u>\$ 61,548</u>	<u>\$ 107,199</u>	<u>\$ 45,016</u>	<u>\$ 68,118</u>
	2019 Fiscal Quarters			
	First	Second	Third	Fourth
Segment external net sales:				
Aerospace	\$ 392,887	\$ 482,954	\$ 498,775	\$ 505,904
Industrial (5)	259,924	275,890	253,230	230,633
Total	<u>\$ 652,811</u>	<u>\$ 758,844</u>	<u>\$ 752,005</u>	<u>\$ 736,537</u>
Segment earnings:				
Aerospace	\$ 72,854	\$ 101,722	\$ 103,238	\$ 111,312
Industrial (5)	29,169	27,128	26,240	10,984
Nonsegment expenses (6)(7)	(29,001)	(27,496)	(26,713)	(36,237)
Interest expense, net	(11,507)	(11,186)	(10,451)	(9,444)
Consolidated earnings before income taxes	<u>\$ 61,515</u>	<u>\$ 90,168</u>	<u>\$ 92,314</u>	<u>\$ 76,615</u>

Notes:

1. Nonsegment expenses for the first quarter and fourth quarter of fiscal year 2020 include a pre-tax gain on the sale of assets of \$13,522 and \$8,801, respectively, associated with our decision to relocate our Duarte, California operations to the newly renovated Drake Campus in Fort Collins, Colorado.
2. Nonsegment expenses in the first quarter of fiscal year 2020, include a non-cash impairment charge of \$37,902, representing the write down of the associated net assets held for sale to their fair market value as of December 31, 2019 related to Woodward's approved plan to divest the disposal group.
3. Nonsegment expenses in the third quarter of fiscal year 2020 include a pre-tax gain of \$30,481 and a swap breakage fee of \$3,000, as a result of terminating and settling our existing cross-currency interest rate swap derivative instruments.
4. Nonsegment expenses in the third quarter and fourth quarter of fiscal year 2020 include a pre-tax restructuring charges totaling \$19,040 and \$3,176, respectively, which relate to the Company's response to the ongoing global economic challenges resulting from the COVID-19 pandemic and its impact on the Company's business.
5. Industrial segment earnings for the first through third quarters of fiscal year 2019 include pre-tax non-cash charges of \$9,511, \$8,985, \$2,604, respectively. These costs are associated with 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.
6. Nonsegment expenses for the fourth quarter of fiscal year 2019 include pre-tax, non-cash charges of \$12,601 related to the impairment of receivables, inventory and certain other assets in connection with Servion.
7. Nonsegment expenses for the first through fourth quarters of fiscal year 2019 include, pre-tax Duarte move related costs of \$6,963, \$9,161, \$7,035, and \$3,930, respectively.

Item 9. Changes in and Disagreements with Accountants

There have been no disagreements or any reportable events requiring disclosure under Item 304(b) of Regulation S-K.

Item 9A. Controls and Procedures

We have established disclosure controls and procedures, which are designed to ensure that information required to be disclosed in reports filed or submitted under the Securities Exchange Act of 1934, as amended (the “Act”) is recorded, processed, summarized, and reported within the time periods specified in the SEC’s rules and forms. These disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit under the Act is accumulated and communicated to management, including our Principal Executive Officer (Thomas A. Gendron, Chairman of the Board, Chief Executive Officer and President) and Principal Financial and Accounting Officer (Robert F. Weber, Jr., Vice Chairman and Chief Financial Officer), as appropriate, to allow timely decisions regarding required disclosures.

Thomas A. Gendron and Robert F. Weber, Jr. evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Form 10-K. Based on their evaluations, they concluded that our disclosure controls and procedures were effective as of September 30, 2020.

During the quarterly period ended December 31, 2019, we adopted the new lease guidance of ASC 842. We designed new business policies and procedures to assist in the adoption and ongoing application of the new guidance, provided training, and designed and applied new internal controls related to impacted accounting and disclosures. Other than the implementation of new internal controls upon adoption of ASC 842, there have been no other changes in our internal control over financial reporting identified in management’s evaluation pursuant to Rules 13a-15(d) or 15d-15(d) of the Exchange Act during the period covered by this Annual Report on Form 10-K that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management’s Annual Report on Internal Control Over Financial Reporting

We are responsible for establishing and maintaining adequate internal control over financial reporting for the Company. We have evaluated the effectiveness of internal control over financial reporting using the criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and, based on that evaluation, have concluded that the Company’s internal control over financial reporting was effective as of September 30, 2020, the end of the Company’s most recent fiscal year.

Deloitte & Touche LLP, an independent registered public accounting firm, conducted an audit of Woodward’s internal control over financial reporting as of September 30, 2020 as stated in their report included in “Item 9A. – Controls and Procedures.”

Internal control over financial reporting is a process designed by, or under the supervision of, our principal executive and principal financial officers, or persons performing similar functions, and effected by our Board of Directors, management, and other personnel, to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of our financial statements for external purposes in accordance with generally accepted accounting principles. Internal control over financial reporting includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorization of management and directors of the Company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company’s assets that could have a material effect on the financial statements.

There have been no changes in our internal control over financial reporting during the fourth fiscal quarter ended September 30, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors of Woodward, Inc.

Fort Collins, Colorado

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Woodward, Inc. and subsidiaries (the “Company”) as of September 30, 2020, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 30, 2020, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended September 30, 2020, of the Company and our report dated November 20, 2020, expressed an unqualified opinion on those financial statements and included an explanatory paragraph regarding the Company’s adoption of a new accounting standard.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

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

/s/ DELOITTE & TOUCHE LLP

Denver, Colorado

November 20, 2020

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item relating to our directors and nominees, regarding compliance with Section 16(a) of the Securities Act of 1934, and regarding our Audit Committee is included under the captions “Board of Directors,” “Board Meetings and Committees – Audit Committee” (including information with respect to audit committee financial experts), “Stock Ownership of Management,” and, if applicable “Delinquent Section 16(a) Reports” in our Proxy Statement related to the Annual Meeting of Stockholders to be held virtually on January 27, 2021 and is incorporated herein by reference. There have been no material changes to the procedures by which security holders may recommend nominees to our board of directors.

The information required by this item relating to the identities and background of our executive officers and other corporate officers is included under the caption “Executive Officers of the Registrant” in Item 1 of this report.

We have adopted a code of ethics that applies to all of our employees, including our principal executive officer and our principal financial and accounting officer. This code of ethics is posted on our Website. The Internet address for our Website is www.woodward.com, and the code of ethics may be found from our main Web page by clicking first on “Investors” and then on “Corporate Governance,” and then on “Woodward Codes of Business Conduct and Ethics.”

We intend to satisfy any disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of this code of ethics by posting such information to our Website, at the address and location specified above.

Item 11. Executive Compensation

Information regarding executive compensation is under the captions “Board Meetings and Committees – Director Compensation,” “Board Meetings and Committees – Compensation Committee Interlocks and Insider Participation,” “Compensation Discussion and Analysis,” “Compensation Committee Report,” “Executive Compensation” and “Board Meetings and Committees – Compensation Committee – Risk Assessment” in our Proxy Statement, and is incorporated herein by reference, except the section captioned “Compensation Committee Report on Compensation Discussion and Analysis” is hereby “furnished” and not “filed” with this Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information regarding security ownership of certain beneficial owners and management and related stockholder matters is under the tables captioned “Stock Ownership of Management,” “Persons Owning More Than Five Percent of Woodward Stock,” and “Executive Compensation – Equity Compensation Plan Information” in our Proxy Statement, and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information set forth under “Board Meetings and Committees – Related Person Transaction Policies and Procedures,” “Board of Directors” and “Audit Committee Report to Stockholders” in our Proxy Statement and is incorporated herein by reference except the section captioned “Audit Committee Report” is hereby “furnished” and not “filed” with this Form 10-K.

Item 14. Principal Accountant Fees and Services

Information regarding principal accountant fees and services is under the captions “Audit Committee Report to Stockholders – Audit Committee’s Policy on Pre-Approval of Services Provided by Independent Registered Public Accounting Firm” and “Audit Committee Report to Stockholders – Fees Paid to Independent Registered Public Accounting Firm” in our Proxy Statement, and is incorporated herein by reference.

Item 15. Exhibits and Financial Statement Schedules

	<u>Page Number in Form 10-K</u>
(a) (1) Consolidated Financial Statements:	
<u>Report of Independent Registered Public Accounting Firm</u>	65
<u>Consolidated Statements of Earnings for the fiscal years ended September 30, 2020, 2019, and 2018</u>	68
<u>Consolidated Statements of Comprehensive Earnings for the fiscal years ended September 30, 2020, 2019, and 2018</u>	69
<u>Consolidated Balance Sheets at September 30, 2020 and 2019</u>	70
<u>Consolidated Statements of Cash Flows for the fiscal years ended September 30, 2020, 2019, and 2018</u>	71
<u>Consolidated Statements of Stockholders' Equity for the fiscal years ended September 30, 2020, 2019, and 2018</u>	72
<u>Notes to Consolidated Financial Statements</u>	73
(a) (2) <u>Consolidated Financial Statement Schedule:</u>	
<u>Valuation and Qualifying Accounts</u>	139
Financial statements and schedules other than those listed above are omitted for the reason that they are not applicable, are not required, or the information is included in the financial statements or the footnotes.	
(a) (3) <u>Exhibits Filed as Part of This Report:</u>	
‡ 2.1 <u>Share Purchase Agreement relating to the sale and purchase of all shares in L'Orange GmbH and Fluid Mechanics LLC dated April 8, 2018, filed as Exhibit 2.1 to Quarterly Report on Form 10-Q, filed on August 8, 2018</u>	
‡ 3.1 <u>Restated Certificate of Incorporation, as amended October 3, 2007, filed as Exhibit 3(i)(a) to Annual Report on Form 10-K filed November 20, 2008</u>	
‡ 3.2 <u>Bylaws of Woodward, Inc., as amended and restated on January 11, 2020, filed as Exhibit 3.2 to Annual Report on Form 10-K filed November 12, 2015</u>	
‡ 3.3 <u>Certificate of Amendment of Certificate of Incorporation, dated January 23, 2008, filed as Exhibit 3(i)(b) to Annual Report on Form 10-K filed November 20, 2008</u>	
‡ 3.4 <u>Certificate of Amendment of the Restated Certificate of Incorporation, dated January 26, 2011, filed as Exhibit 3.1 to Current Report on Form 8-K filed January 28, 2011</u>	
‡ 3.5 <u>Certificate of Designation of Rights, Preferences and Privileges of Series B Preferred Stock</u>	
‡ 4.1 <u>Preferred Stock Rights Agreement dated as of April 5, 2020, by and between Woodward, Inc. and American Stock Transfer & Trust Company, LLC, as rights agent</u>	
†‡ 10.1 <u>Long-Term Management Incentive Compensation Plan, filed as Exhibit 10(c) to Annual Report on Form 10-K filed December 22, 2000</u>	
†‡ 10.2 <u>Summary Description of the Woodward Variable Incentive Plan, filed as Exhibit 10.2 to Annual Report on Form 10-K filed November 16, 2016</u>	
†‡ 10.3 <u>2002 Stock Option Plan, effective January 1, 2002, filed as Exhibit 10(iii) to Quarterly Report on Form 10-Q filed May 9, 2002</u>	
†‡ 10.4 <u>Form of Outside Director Stock Purchase Agreement with James L. Rulseh, filed as Exhibit 10(j) to Annual Report on Form 10-K filed December 9, 2002</u>	
†‡ 10.5 <u>2006 Omnibus Incentive Plan, effective January 25, 2006, filed as Exhibit 4.1 to Registration Statement on Form S-8 filed April 28, 2006</u>	

- †‡ 10.6 Amendment No. 1 to the Woodward, Inc. 2006 Omnibus Incentive Plan, effective as of January 26, 2011, filed as Exhibit 10.10 to Annual Report on Form 10-K filed November 16, 2011
- †‡ 10.7 Material Definitive Agreement with A. Christopher Fawzy, filed as Exhibit 10.12 to Quarterly Report on Form 10-Q filed July 25, 2007
- †‡ 10.8 Form of Non-Qualified Stock Option Agreement, filed as Exhibit 99.2 to Current Report on Form 8-K filed November 21, 2007
- †‡ 10.9 Form of Non-Qualified Stock Option Agreement, filed as Exhibit 10.12 to Annual Report on Form 10-K filed November 15, 2012
- †‡ 10.10 Form of Non-Qualified Stock Option Agreement, filed as Exhibit 10.13 to Annual Report on Form 10-K filed November 14, 2013
- †‡ 10.11 Form of Restricted Stock Agreement, filed as Exhibit 10.1 to Quarterly Report on Form 10-Q filed January 22, 2014
- †‡ 10.12 2017 Omnibus Incentive Plan, effective September 14, 2016, filed as Exhibit 10.1 to Quarterly Report on Form 10-Q filed January 25, 2017
- †‡ 10.13 Form of Non-Qualified Stock Option Agreement, filed as Exhibit 10.2 to Quarterly Report on Form 10-Q filed January 25, 2017
- ‡ 10.14 Credit Agreement, dated as of July 10, 2013, by and among the Company, the foreign subsidiary borrowers party thereto, the institutions party thereto as lenders, and Wells Fargo Bank, National Association, as administrative agent, filed as Exhibit 10.1 to Current Report on Form 8-K filed July 16, 2013
- ‡ 10.15 Amendment No. 1 to Credit Agreement, dated April 28, 2015, and the conformed Credit Agreement by and among the Company, certain foreign subsidiary borrowers of the Company from time to time parties thereto, the institutions from time to time parties thereto, as lenders, Wells Fargo Bank, National Association, as administrative agent, filed as Exhibit 10.1 to Quarterly Report on Form 10-Q filed July 21, 2015
- ‡ 10.17 Note Purchase Agreement, dated October 1, 2008, by and among the Company and the purchasers named therein, filed as Exhibit 10.2 to Current Report on Form 8-K filed October 7, 2008
- ‡ 10.18 Amendment No. 1 to 2008 Note Purchase Agreement, dated as of October 1, 2013, by and among the Company and the noteholders named therein, filed as Exhibit 10.2 to Current Report on Form 8-K filed October 4, 2013
- ‡ 10.19 Note Purchase Agreement, dated April 3, 2009, by and among the Company and the purchasers named therein, filed as Exhibit 10.2 to Current Report on Form 8-K filed April 8, 2009
- ‡ 10.20 Amendment No. 1 to 2009 Note Purchase Agreement, dated as of October 1, 2013, by and among the Company and the noteholders named therein, filed as Exhibit 10.3 to Current Report on Form 8-K filed October 4, 2013
- ‡ 10.21 Note Purchase Agreement, dated October 1, 2013, by and among the Company and the purchasers named therein, filed as Exhibit 10.1 to Current Report on Form 8-K filed October 4, 2013
- ‡ 10.22 Note Purchase Agreement, dated September 23, 2016, by and among the Company and the purchasers named therein, filed as Exhibit 10.20 to Annual Report on Form 10-K filed November 16, 2016
- ‡ 10.23 Note Purchase Agreement, dated September 23, 2016, by and among Woodward International Holding B.V. and the purchasers named therein, filed as Exhibit 10.21 to Annual Report on Form 10-K filed November 16, 2016
- †‡ 10.24 Form of Change in Control Agreement for the Company's principal executive officer and other executive officers other than the Company's principal financial officer, filed as Exhibit 10.25 to Annual Report on Form 10-K filed November 12, 2014
- †‡ 10.25 Form of Change in Control Agreement for the Company's principal financial officer, filed as Exhibit 10.26 to Annual Report on Form 10-K filed November 12, 2014
- †‡ 10.26 Executive Benefit Plan, as amended and restated as of September 18, 2013, filed as Exhibit 10.31 to Annual Report on Form 10-K filed November 14, 2013

- †‡ 10.27 [Sagar Patel employment letter, dated June 17, 2011, filed as Exhibit 10.2 to Quarterly Report on Form 10-Q filed July 26, 2011](#)
- †‡ 10.28 [Woodward Retirement Savings Plan, as amended and restated effective as of January 1, 2016, filed as Exhibit 10.1 to Quarterly Report on Form 10-Q filed February 9, 2016](#)
- †‡ 10.29 [Thomas G. Cromwell employment offer letter, dated January 30, 2019, filed as exhibit 10.1 to Quarterly Report on Form 10-Q filed May 8, 2019](#)
- ‡ 10.31 [Purchase and Sale Agreement between Woodward, Inc. and General Electric Company dated January 4, 2016 filed as Exhibit 2.1 to Current Report on Form 8-K filed January 8, 2016](#)
- ‡ 10.32 [Amended and Restated Limited Liability Company Agreement of Convergence Fuel Systems, LLC, dated January 4, 2016 filed as Exhibit 10.1 to Current Report on Form 8-K filed January 8, 2016](#)
- ‡ 10.35 [Frame Development and Purchase Agreement between MTU Friedrichshafen GmbH and L'Orange GmbH, filed as Exhibit 10.1 to Quarterly Report on Form 10-Q, filed August 8, 2018](#)
- ‡ 10.36 [Note Purchase Agreement, dated May 31, 2018, by and among Woodward, Inc. and the purchasers named therein, filed as Exhibit 10.1 to Current Report on Form 8-K, filed June 4, 2018](#)
- ‡ 10.37 [Amendment No. 1 to 2013 Note Purchase Agreement, dated as of May 31, 2018, by and among Woodward, Inc. and the noteholders names therein, filed as Exhibit 10.2 of the Company's Current Report on Form 8-K, filed June 4, 2018](#)
- ‡ 10.38 [Amendment No. 1 to 2016 Series M Note Purchase Agreement, dated as of May 31, 2018, by and among Woodward, Inc. and the noteholders names therein filed as Exhibit 10.3 of the Company's Current Report on Form 8-K, filed June 4, 2018](#)
- ‡ 10.39 [Amendment No. 1 to 2016 Series N and O Note Purchase Agreement, dated as of May 31, 2018, by and among Woodward International Holding B.V., Woodward, Inc. and the noteholders names therein, filed as Exhibit 10.4 of the Company's Current Report on Form 8-K, filed June 4, 2018](#)
- ‡ 10.40 [Amended and Restated Credit Agreement dated June 19, 2019, by and among the Company, certain foreign subsidiaries borrowers of the Company from time to time parties thereto, the institutions from time to time party thereto, as lenders, Wells Fargo Bank, National Association, as administrative agent, filed as Exhibit 10.1 on Form 10-Q, filed August 12, 2019](#)
- † 10.41 [Form of Restricted Stock Unit Agreement, filed as Exhibit 10.39 on Form 10-K, filed November 13, 2018](#)
- † 10.42 [Form of Non-Qualified Stock Option Agreement filed as Exhibit 10.40 on Form 10-K, filed November 13, 2018](#)
- * 10.43 [Outside Director Compensation Policy](#)
- * 21.1 [Subsidiaries](#)
- * 23.1 [Consent of Independent Registered Public Accounting Firm](#)
- * 31.1 [Rule 13a-14\(a\)/15d-14\(a\) certification of Thomas A. Gendron](#)
- * 31.2 [Rule 13a-14\(a\)/15d-14\(a\) certification of Robert F. Weber, Jr.](#)
- * 32.1 [Section 1350 certifications](#)
- * 101.INS Inline XBRL Instance Document.
- * 101.SCH Inline XBRL Taxonomy Extension Schema Document
- * 101.CAL Inline XBRL Taxonomy Extension Calculation Linkbase Document
- * 101.DEF Inline XBRL Taxonomy Extension Definition Linkbase Document
- * 101.LAB Inline XBRL Taxonomy Extension Label Linkbase Document
- * 101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase Document
- * 104 Cover Page Interactive Data File (formatted as Inline XBRL and Contained in Exhibit 101)

Attached as Exhibit 101 to this report are the following materials from Woodward, Inc.'s Annual Report on Form 10-K for the year ended September 30, 2020 formatted in Inline XBRL (eXtensible Business Reporting Language): (i) the Consolidated Statements of Earnings, (ii) the Consolidated Statements of Comprehensive Earnings, (iii) the Consolidated Balance Sheets, (iv) the Consolidated Statements of Cash Flows, (v) the Consolidated Statements of Stockholders' Equity, and (vi) the Notes to the Consolidated Financial Statements.

- † Management contract or compensatory plan or arrangement.
- ‡ Incorporated by reference as an exhibit to this Report (file number 000-08408, unless otherwise indicated).
- * Filed as an exhibit to this Report.

Item 16. Form 10-K Summary

Not applicable.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: November 20, 2020

WOODWARD, INC.

/s/ Thomas A. Gendron

Thomas A. Gendron
*Chairman of the Board, Chief Executive Officer, and President
(Principal Executive Officer)*

Date: November 20, 2020

/s/ Robert F. Weber, Jr.

Robert F. Weber, Jr.
*Vice Chairman and Chief Financial Officer
(Principal Financial and Accounting Officer)*

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

Signature	Title	Date
/s/ John D. Cohn _____ John D. Cohn	Director	November 19, 2020
/s/ Paul Donovan _____ Paul Donovan	Director	November 19, 2020
/s/ Eileen P. Drake _____ Eileen P. Drake	Director	November 18, 2020
/s/ Thomas A. Gendron _____ Thomas A. Gendron	Chairman of the Board and Director	November 19, 2020
/s/ Daniel G. Korte _____ Daniel G. Korte	Director	November 18, 2020
/s/ Mary L. Petrovich _____ Mary L. Petrovich	Director	November 19, 2020
/s/ Ronald M. Sega _____ Ronald M. Sega	Director	November 18, 2020
/s/ Gregg C. Sengstack _____ Gregg C. Sengstack	Director	November 19, 2020

WOODWARD, INC. AND SUBSIDIARIES
SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS

For the years ended September 30, 2020, 2019, and 2018

(in thousands)

Column A	Column B	Column C		Column D	Column E
Description	Balance at Beginning of Year	Additions		Deductions (b)	Balance at End of Year
		Charged to Costs and Expenses	Charged to Other Accounts (a)		
Fiscal year 2020					
Allowance for uncollectible accounts	\$ 7,908	\$ 4,293	\$ 30	\$ (5,342)	\$ 6,889
Deferred tax asset valuation allowance	3,638	12	—	(1,818)	1,832
Fiscal year 2019					
Allowance for uncollectible accounts	\$ 3,938	\$ 4,899	\$ 251	\$ (1,180)	\$ 7,908
Deferred tax asset valuation allowance	4,522	19	—	(903)	3,638
Fiscal year 2018					
Allowance for uncollectible accounts	3,776	207	466	(511)	3,938
Deferred tax asset valuation allowance	3,714	73	553	182	4,522

Notes:

- (a) Includes recoveries of accounts previously written off.
- (b) Represents accounts receivable written off against the allowance for uncollectible accounts and releases of valuation reserves to income tax expense. Also included are foreign currency exchange rate adjustments. Currency translation adjustments resulted in a decrease in the reserves of \$123 in fiscal year 2020, an increase in the reserves of \$112 in fiscal year 2019, and an increase in the reserves of \$96 in fiscal year 2018.

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CORPORATE INFORMATION



BOARD OF DIRECTORS

JOHN D. COHN

President, CrossBorder Strategic Solutions, LLC

PAUL DONOVAN

Retired Executive Vice President and Chief Financial Officer, Wisconsin Energy Corporation

EILEEN P. DRAKE

Chief Executive Officer and President, Aerojet Rocketdyne Holdings, Inc.

THOMAS A. GENDRON

Chairman, Chief Executive Officer and President, Woodward, Inc.

DANIEL G. KORTE

Global Vice President, Aerospace PPG Industries, Inc.

MARY L. PETROVICH

Senior Advisor-Private Equity, Carlyle Group and American Security Partners

JAMES R. RULSEH*

Retired President, JRR & Associates, LLC

RONALD M. SEGA

Chief Technology Officer, U.S. Army Futures Command

GREGG C. SENGSTACK

Chairman of the Board and Chief Executive Officer, Franklin Electric Co., Inc.

**Mr. Rulseh retired from the Board of Directors effective November 19, 2020*

OFFICERS*

THOMAS A. GENDRON

Chairman, Chief Executive Officer and President

THOMAS G. CROMWELL

Vice Chairman, Chief Operating Officer

ROBERT F. WEBER, JR.

Vice Chairman and Chief Financial Officer

PAUL BENSON

Corporate Vice President, Human Resources

DANIEL M. BOWMAN

Corporate Vice President, Strategy and Business Development

A. CHRISTOPHER FAWZY

Corporate Vice President, General Counsel, Corporate Secretary and Chief Compliance Officer

SAGAR A. PATEL

President, Aerospace Aftermarket and Hydraulic Systems

MATTEO R. PISCIOTTA

Corporate Vice President, Global Sourcing

CHAD R. PREISS**

President, Engine Systems

JOHN D. TYSVER

Corporate Vice President, Technology

**Officer titles as of October 31, 2020*

***Mr. Preiss announced that he will retire from the company effective January 8, 2021*

INVESTOR INFORMATION

WOODWARD, INC.

Corporate Headquarters
1081 Woodward Way
Fort Collins, CO 80524
1-970-482-5811

www.woodward.com

INVESTOR INFORMATION

Investor.Relations@woodward.com
1-970-498-3580

TRANSFER AGENT AND REGISTRAR

American Stock Transfer & Trust Company
Shareholder Services
6201 15th Avenue
Brooklyn, NY 11219
1-800-937-5449
www.astfinancial.com

STOCK EXCHANGE

NASDAQ Global Select Market
Ticker Symbol: WWD

SEC filings are available on our website at www.woodward.com

STOCKHOLDER ACCOUNT ASSISTANCE

Stockholders who wish to change the address or ownership of stock, report lost certificates, eliminate duplicate mailings, or for other account registration procedures and assistance, should contact the Transfer Agent at the address or phone number on this page.

DIVIDEND REINVESTMENT PLAN AND DIRECT DEPOSIT OF DIVIDENDS

Woodward offers stockholders of record a convenient Dividend Reinvestment and Direct Stock Purchase and Sale Plan. Through this Plan, shareholders have options to purchase or sell shares of Woodward stock, have their dividends automatically reinvested in Woodward, and to make periodic supplemental cash payments to purchase additional shares. For further information and an authorization form, contact the Transfer Agent at the address or phone number on this page.

ANNUAL MEETING

The Annual Meeting of Stockholders will be held virtually on January 27, 2021, at 8:00 a.m. MST.

EQUAL OPPORTUNITY EMPLOYER STATEMENT

It is Woodward's policy to provide equal employment opportunity for all qualified members and applicants without regard to race, color, religion, age, sex, gender identity, national origin, disability, veteran's or marital status, genetic information, or other protected class, and to base all employment decisions so as to further this principle of equal employment opportunity.

BUSINESS DESCRIPTION

WOODWARD IS AN INDEPENDENT DESIGNER, MANUFACTURER, AND SERVICE PROVIDER OF CONTROL SOLUTIONS FOR THE AEROSPACE AND INDUSTRIAL MARKETS.

The company's innovative fluid energy, combustion control, electrical energy, and motion control systems help customers offer cleaner, more reliable and more efficient equipment.

OUR AEROSPACE systems and components optimize the performance of commercial, business and military aircraft, missiles and weapons, ground vehicles and other equipment.

OUR INDUSTRIAL systems and components enhance the performance of gas and steam turbines, reciprocating engines, compressors, generator sets and other energy-related industrial equipment.

OUR CUSTOMERS include leading original equipment manufacturers and end users of their products.

WWW.WOODWARD.COM

1081 Woodward Way, PO Box 1519
Fort Collins, Colorado 80524-1519
970-482-5811

ALWAYS INNOVATING FOR A BETTER FUTURE