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, 2019

☐ **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 001-32833

TransDigm Group Incorporated
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

41-2101738
(I.R.S. Employer Identification No.)

1301 East 9th Street, Suite 3000, Cleveland, Ohio	**44114**
(Address of principal executive offices)	**(Zip Code)**

(216) 706-2960
(Registrants' telephone number, including area code)

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

Title of each class	**Trading symbol**	**Name of exchange on which registered**
Common Stock, $0.01 par value	**TDG**	**New York Stock Exchange**

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

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x 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 x

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 x No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No ☐

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

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

Large Accelerated Filer	☒	Accelerated Filer	☐
Non-Accelerated Filer	☐	Smaller Reporting Company	☐
Emerging Growth Company	☐		

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No x

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the registrant as of March 31, 2019, based upon the last sale price of such voting and non-voting common stock on that date, was $24,193,750,882.

The number of shares outstanding of TransDigm Group Incorporated's common stock, par value $.01 per share, was 53,548,349 as of November 17, 2019.

Documents incorporated by reference: Certain sections of the registrant's definitive Proxy Statement to be filed in connection with its 2020 Annual Meeting of Shareholders, are incorporated by reference into Part III of this Annual Report on Form 10-K.

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Special Note Regarding Forward-Looking Statements

This report on Form 10-K contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and 27A of the Securities Act of 1933, as amended. Discussions containing such forward-looking statements may be found in Items 1, 1A, 2, 3, 5, 7 and 7A hereof and elsewhere within this Report generally. In addition, when used in this Report, the words "believe," "may," "will," "should," "expect," "intend," "plan," "predict," "anticipate," "estimate" or "continue" and other words and terms of similar meaning are intended to identify forward-looking statements. Although the Company (as defined below) believes that its plans, intentions and expectations reflected in or suggested by such forward-looking statements are reasonable, such forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from the forward-looking statements made in this Report. The more important of such risks and uncertainties are set forth under the caption "Risk Factors" and elsewhere in this Report. Many such factors are outside the control of the Company. Consequently, such forward-looking statements should be regarded solely as our current plans, estimates and beliefs. We do not undertake, and specifically decline, any obligation, to publicly release the results of any revisions to these forward-looking statements that may be made to reflect any future events or circumstances after the date of such statements or to reflect the occurrence of anticipated or unanticipated events. All forward-looking statements attributable to the Company or persons acting on its behalf are expressly qualified in their entirety by these cautionary statements.

Important factors that could cause actual results to differ materially from the forward-looking statements made in this Annual Report on Form 10-K include but are not limited to: the sensitivity of our business to the number of flight hours that our customers' planes spend aloft and our customers' profitability, both of which are affected by general economic conditions; future geopolitical or worldwide events; cyber-security threats and natural disasters; our reliance on certain customers; the U.S. defense budget and risks associated with being a government supplier including government audits and investigations; failure to maintain government or industry approvals; failure to complete or successfully integrate acquisitions, including our acquisition of Esterline; our indebtedness; potential environmental liabilities; liabilities arising in connection with litigation; increases in raw material costs, taxes and labor costs that cannot be recovered in product pricing; risks and costs associated with our international sales and operations; and other risk factors.

In this report, the term "TD Group" refers to TransDigm Group Incorporated, which holds all of the outstanding capital stock of TransDigm Inc. The terms "Company," "TransDigm," "we," "us," "our" and similar terms, unless the context otherwise requires, refer to TD Group, together with TransDigm Inc. and its wholly-owned and majority-owned subsidiaries for which it has a controlling interest. References to "fiscal year" mean the year ending or ended September 30. For example, "fiscal year 2019" or "fiscal 2019" means the period from October 1, 2018 to September 30, 2019.

PART I

ITEM 1. BUSINESS

The Company

TransDigm Inc. was formed in 1993 in connection with a leveraged buyout transaction. TD Group was formed in 2003 to facilitate a leveraged buyout of TransDigm Inc. The Company was owned by private equity funds until its initial public offering in 2006. TD Group's common stock is publicly traded on the New York Stock Exchange, or NYSE, under the ticker symbol "TDG."

We believe we are a leading global designer, producer and supplier of highly engineered aircraft components for use on nearly all commercial and military aircraft in service today. Our business is well diversified due to the broad range of products we offer to our customers. We estimate that approximately 90% of our net sales for fiscal year 2019 were generated by proprietary products. In addition for fiscal year 2019, we estimate that we generated approximately 80% of our net sales from products in which we are the sole source provider.

Most of our products generate significant aftermarket revenue. Once our parts are designed into and sold on a new aircraft, we generate net sales from aftermarket consumption over the life of that aircraft, which is generally estimated to be approximately 25 to 30 years. A typical platform can be produced for 20 to 30 years, giving us an estimated product life cycle in excess of 50 years. We estimate that approximately 52% of our net sales in fiscal year 2019 were generated from aftermarket sales, the vast majority of which come from the commercial and military aftermarkets. These aftermarket revenues have historically produced a higher gross margin and been more stable than sales to original equipment manufacturers, or OEMs.

Products

We primarily design, produce and supply highly engineered proprietary aerospace components (and certain systems/subsystems) with significant aftermarket content. We seek to develop highly customized products to solve specific needs for aircraft operators and manufacturers. We attempt to differentiate ourselves based on engineering, service and manufacturing capabilities. We typically choose not to compete for non-proprietary "build to print" business because it frequently offers lower margins than proprietary products. We believe that our products have strong brand names within the industry and that we have a reputation for high quality, reliability and strong customer support.

Our business is well diversified due to the broad range of products that we offer to our customers. Some of our more significant product offerings, substantially all of which are ultimately provided to end-users in the aerospace industry, include mechanical/electro-mechanical actuators and controls, ignition systems and engine technology, specialized pumps and valves, power conditioning devices, specialized AC/DC electric motors and generators, NiCad batteries and chargers, engineered latching and locking devices, rods and locking devices, engineered connectors and elastomers, databus and power controls, cockpit security components and systems, specialized cockpit displays, aircraft audio systems, specialized lavatory components, seat belts and safety restraints, engineered interior surfaces and related components, advanced sensor products, switches and relay panels, advanced displays, thermal protection and insulation, lighting and control technology, military personnel parachutes, high performance hoists, winches and lifting devices, and cargo loading, handling and delivery systems.

Acquisition of Esterline Technologies Corporation

On March 14, 2019, TransDigm completed the acquisition of all the outstanding stock of Esterline Technologies Corporation (“Esterline”) for $122.50 per share in cash, plus the repayment of Esterline debt. The purchase price, net of cash acquired of approximately $398.2 million, totaled approximately $3,923.9 million. Of the $3,923.9 million purchase price, $3,536.3 million was paid at closing and the remaining $387.6 million was classified as restricted cash for the redemption of Esterline’s outstanding senior notes due 2023 (herein the "2023 Notes"). The 2023 Notes were redeemed on April 15, 2019. Esterline, through its subsidiaries, is an industry leader in specialized manufacturing for the aerospace and defense industry, primarily within three core disciplines: advanced materials, avionics and controls and sensors and systems. The acquisition of Esterline expands TransDigm's platform of proprietary and sole source content for the aerospace and defense industry and the Esterline products have significant aftermarket exposure.

For further details on the acquisitions and divestitures that occurred during fiscal 2019, refer to Note 2, “Acquisitions and Divestitures,” to the consolidated financial statements included herein.

Segments

The Company’s businesses are organized and managed in three reporting segments: Power & Control, Airframe and Non-aviation.

The Power & Control segment includes operations that primarily develop, produce and market systems and components that predominately provide power to or control power of the aircraft utilizing electronic, fluid, power and mechanical motion control technologies. Major product offerings include mechanical/electro-mechanical actuators and controls, ignition systems and engine technology, specialized pumps and valves, power conditioning devices, specialized AC/DC electric motors and generators, databus and power controls, advanced sensor products, switches and relay panels, high performance hoists, winches and lifting devices and cargo loading and handling systems. Primary customers of this segment are engine and power system and subsystem suppliers, airlines, third party maintenance suppliers, military buying agencies and repair depots. Products are sold in the original equipment and aftermarket market channels.

The Airframe segment includes operations that primarily develop, produce and market systems and components that are used in non-power airframe applications utilizing airframe and cabin structure technologies. Major product offerings include engineered latching and locking devices, rods and locking devices, engineered connectors and elastomers, cockpit security components and systems, aircraft audio systems, specialized lavatory components, seat belts and safety restraints, engineered interior surfaces and related components, advanced displays, thermal protection, lighting and control technology, military personnel parachutes and cargo delivery systems. Primary customers of this segment are airframe manufacturers and cabin system suppliers and subsystem suppliers, airlines, third party maintenance suppliers, military buying agencies and repair depots. Products are sold in the original equipment and aftermarket market channels.

The Non-aviation segment includes operations that primarily develop, produce and market products for non-aviation markets. Major product offerings include seat belts and safety restraints for ground transportation applications, mechanical/electro-mechanical actuators and controls for space applications, hydraulic/electromechanical actuators and fuel valves for land based gas turbines, and refueling systems for heavy equipment used in mining, construction and other industries and turbine controls for the energy and oil and gas markets. Primary customers of this segment are off-road vehicle suppliers and subsystem suppliers, child restraint system suppliers, satellite and space system suppliers, manufacturers of heavy equipment used in mining, construction and other industries and turbine original equipment manufacturers, gas pipeline builders and electric utilities.

The Esterline businesses were acquired towards the end of the second quarter of fiscal 2019 and preliminarily assessed as a separate segment of the Company. During the third quarter of fiscal 2019, the Esterline businesses were integrated into TransDigm's existing Power & Control, Airframe and Non-aviation segments.

For financial information about our segments, see Note 17, “Segments,” to the consolidated financial statements included herein.

Sales and Marketing

Consistent with our overall strategy, our sales and marketing organization is structured to continually develop technical solutions that meet customer needs. In particular, we attempt to focus on products and programs that will lead to high-margin, repeatable sales in the aftermarket.

We have structured our sales efforts along our major product offerings, assigning a business unit manager to certain products. Each business unit manager is expected to grow the sales and profitability of the products for which he or she is responsible and to achieve the targeted annual level of bookings, sales, new business and profitability for such products. The business unit managers are assisted by account managers and sales engineers who are responsible for covering major OEM and aftermarket accounts. Account managers and sales engineers are expected to be familiar with the personnel, organization and needs of specific customers to achieve total bookings and new business goals for each account and, together with the business unit managers, to determine when additional resources are required at customer locations. Most of our sales personnel are evaluated, in part, on their bookings and their ability to identify and obtain new business opportunities.

Though typically performed by employees, the account manager function may be performed by independent representatives depending on the specific customer, product and geographic location. We also use a number of distributors to provide logistical support as well as serve as a primary customer contact with certain smaller accounts. Our major distributors are Aviall, Inc. (a subsidiary of The Boeing Company) and Satair A/S (a subsidiary of Airbus S.A.S.).

Manufacturing and Engineering

We maintain approximately 110 manufacturing facilities. Most of our manufacturing facilities are comprised of manufacturing, distribution and engineering functions, and most facilities have certain administrative functions, including management, sales and finance. We continually strive to improve productivity and reduce costs, including rationalization of operations, developing improved control systems that allow for accurate accounting and reporting, investing in equipment, tooling, information systems and implementing broad-based employee training programs. Management believes that our manufacturing systems and equipment contribute to our ability to compete by permitting us to meet the rigorous tolerances and cost sensitive price structure of aircraft component customers.

We attempt to differentiate ourselves from our competitors by producing uniquely engineered products with high quality and timely delivery. Our engineering costs are recorded in cost of sales and in selling and administrative expenses in our consolidated statements of income. Research and development costs are recorded in selling and administrative expenses in our consolidated statements of income. The aggregate of engineering expense and research and development expense represents approximately 9% of our operating units' aggregate costs, or approximately 5% of our consolidated net sales for fiscal year 2019. Our proprietary products, and particularly our new product initiatives, are designed by our engineers and are intended to serve the needs of the aircraft component industry. These proprietary designs must withstand the extraordinary conditions and stresses that will be endured by products during use and meet the rigorous demands of our customers' tolerance and quality requirements.

We use sophisticated equipment and procedures to comply with quality requirements, specifications and Federal Aviation Administration ("FAA") and OEM requirements. We perform a variety of testing procedures as required by our customers, such as testing under different temperature, humidity and altitude levels, flammability testing, shock and vibration testing and X-ray fluorescent measurement. These procedures, together with other customer approved techniques for document, process and quality control, are used throughout our manufacturing facilities. Refer to Note 3, "Summary of Significant Accounting Policies," to the consolidated financial statements included herein with respect to total costs of research and development.

Customers

We predominantly serve customers in the commercial, regional, business jet and general aviation aftermarket, which accounts for approximately 32% of total sales; the commercial aerospace OEM market, comprising large commercial transport manufacturers and regional and business jet manufacturers, which accounts for approximately 26% of total sales; and the defense market, which accounts for approximately 37% of total sales. Non-aerospace sales comprise approximately 5% of our total sales.

Our customers include: (1) distributors of aerospace components; (2) worldwide commercial airlines, including national and regional airlines; (3) large commercial transport and regional and business aircraft OEMs; (4) various armed forces of the United States and friendly foreign governments; (5) defense OEMs; (6) system suppliers; and (7) various other industrial customers. For the fiscal year ended September 30, 2019, The Boeing Company (which includes Aviall, Inc., a distributor of commercial aftermarket parts to airlines throughout the world) accounted for approximately 11% of our net sales. Our top ten customers for fiscal year 2019 accounted for approximately 42% of our net sales. Products supplied to many of our customers are used on multiple platforms.

The markets in which we sell our products are, to varying degrees, cyclical and have experienced upswings and downturns. The demand for our commercial aftermarket parts and services depends on, among other things, the breadth of our installed OEM base, revenue passenger miles ("RPMs"), the size and age of the worldwide aircraft fleet, the percentage of the worldwide fleet that is in warranty, and airline profitability. The demand for defense products is specifically dependent on government budget trends, military campaigns and political pressures.

Competition

The niche markets within the aerospace industry that we serve are relatively fragmented and we face several competitors for many of the products and services we provide. Due to the global nature of the commercial aircraft industry, competition in these categories comes from both U.S. and foreign companies. Competitors in our product offerings range in size from divisions of large public corporations to small privately-held entities with only one or two components in their entire product portfolios.

We compete on the basis of engineering, manufacturing and marketing high quality products, which we believe meet or exceed the performance and maintenance requirements of our customers, consistent and timely delivery, and superior customer service and support. The industry's stringent regulatory, certification and technical requirements and the investments necessary in the development and certification of products may create disincentives for potential new competitors for certain products. If customers receive products that meet or exceed expectations and performance standards, we believe that they will have a reduced incentive to certify another supplier because of the cost and time of the technical design and testing certification process. In addition, we believe that the availability, dependability and safety of our products are reasons for our customers to continue long-term supplier relationships.

Government Contracts

Companies engaged in supplying defense-related equipment and services to U.S. Government agencies are subject to business risks specific to the defense industry. These risks include the ability of the U.S. Government to unilaterally: (1) suspend us from receiving new contracts; (2) terminate existing contracts; (3) reduce the value of existing contracts; (4) audit our contract-related costs and fees, including allocated indirect costs; (5) control and potentially prohibit the export of our products; and (6) seek repayment of contract related payments under certain circumstances. Violations of government procurement laws could result in civil or criminal penalties.

Governmental Regulation

The commercial aircraft component industry is highly regulated by the FAA in the United States and by the Joint Aviation Authorities in Europe and other agencies throughout the world, while the military aircraft component industry is governed by military quality specifications. We, and the components we manufacture, are required to be certified by one or more of these entities or agencies, and, in many cases, by individual OEMs, in order to engineer and service parts and components used in specific aircraft models.

We must also satisfy the requirements of our customers, including OEMs and airlines that are subject to FAA regulations, and provide these customers with products and services that comply with the government regulations applicable to commercial flight operations. In addition, the FAA requires that various maintenance routines be performed on aircraft components. We believe that we currently satisfy or exceed these maintenance standards in our repair and overhaul services. We also maintain several FAA approved repair stations.

In addition, our businesses are subject to many other laws and requirements typically applicable to manufacturers and exporters. Without limiting the foregoing, sales of many of our products that will be used on aircraft owned by foreign entities are subject to compliance with export control laws and the manufacture of our products and the operations of our businesses, including the disposal of hazardous wastes, are subject to compliance with applicable environmental laws.

Market Channels

The commercial aerospace industry, including the aftermarket and OEM market, is impacted by the health of the global economy and geopolitical events around the world. The commercial aerospace industry has shown strength with increases in revenue passenger miles, or RPMs, since 2010, and positive growth continued through 2019 with increase in RPMs , as well as general growth in the large commercial OEM sector (aircraft with 100 or more seats) with order announcements by The Boeing Company and Airbus S.A.S leading to planned increases in production. The primary exception to this was the production rate decrease on the Boeing 737 MAX, although not material to TransDigm's financial results. The 2020 leading indicators or industry consensus suggest a continuation of current trends in the commercial transport market sector supported by continued RPM growth and increases in production at the OEM level.

The defense aerospace market is dependent on government budget constraints, the timing of orders, political pressures and the extent of global conflicts. It is not necessarily affected by general economic conditions that affect the commercial aerospace industry.

Our presence in both the commercial aerospace and military sectors of the aerospace industry may mitigate the impact on our business of any specific industry risk. We service a diversified customer base in the commercial and military aerospace industry, and we provide components to a diverse installed base of aircraft, which mitigates our exposure to any individual airframe platform. At times, declines in sales in one channel have been offset by increased sales in another channel. However, due to differences between the profitability of our products sold to OEM and aftermarket customers, variation in product mix can cause variation in gross margin.

There are many short-term factors (including inventory corrections, unannounced changes in order patterns, strikes, facility shutdowns caused by fires, hurricanes or other incidents and mergers and acquisitions) that can cause short-term disruptions in our quarterly shipment patterns as compared to previous quarters and the same periods in prior years. As such, it can be difficult to determine longer-term trends in our business based on quarterly comparisons. To normalize for short-term fluctuations, we tend to look at our performance over several quarters or years of activity rather than discrete short-term periods.

There are also fluctuations in OEM and aftermarket ordering and delivery requests from quarter-to-quarter, as well as variations in product mix from quarter-to-quarter, that may cause positive or negative variations in gross profit margins since commercial aftermarket sales have historically produced a higher gross margin than sales to commercial OEMs. Again, in many instances these are timing events between quarters and must be balanced with macro aerospace industry indicators.

Commercial Aftermarket

The key growth factors in the commercial aftermarket include worldwide RPMs and the size and activity level of the worldwide fleet of aircraft and the percentage of the fleet that is in warranty.

Commercial OEM Market

The commercial transport market sector, the largest sector in the commercial OEM market, declined in 2019 primarily due to the 737 MAX production rate cuts at The Boeing Company. However, the rate cuts did not have a material impact on our commercial OEM revenue as our revenue growth outperformed the general market. Our commercial transport OEM shipments and revenues generally run ahead of The Boeing Company and Airbus S.A.S airframe delivery schedules. As a result and consistent with prior years, our fiscal 2020 shipments will be a function of, among other things, the estimated 2020 and 2021 commercial airframe production rates. We have been experiencing increased sales in the large commercial OEM sector (aircraft with 100 or more seats) driven by an increase in production by The Boeing Company and Airbus S.A.S tied to previous order announcements. Industry consensus indicates this production increase will continue in 2020 but may begin to moderate or modestly decline in 2021.

Defense

Our military business fluctuates from year to year, and is dependent, to a degree, on government budget constraints, the timing of orders, macro and micro dynamics with respect to Department of Defense procurement policy and the extent of global conflicts. For a variety of reasons, the military spending outlook is very uncertain. For planning purposes, we assume that military-related sales of our types of products to be flat in future years over the recent high levels.

Raw Materials

We require the use of various raw materials in our manufacturing processes. We also purchase a variety of manufactured component parts from various suppliers. We also purchase replacement parts, which are utilized in our various repair and overhaul operations. At times, we concentrate our orders among a few suppliers in order to strengthen our supplier relationships. Most of our raw materials and component parts are generally available from multiple suppliers at competitive prices.

Intellectual Property

We have various trade secrets, proprietary information, trademarks, trade names, patents, copyrights and other intellectual property rights, which we believe, in the aggregate but not individually, are important to our business.

Backlog

As of September 30, 2019, the Company estimated its sales order backlog at $3,437 million compared to an estimated sales order backlog of $2,026 million as of September 30, 2018. The increase in backlog is due to growth from recent acquisitions, particularly the Esterline acquisition, and organic growth in the commercial aftermarket, commercial OEM and defense markets. The majority of the purchase orders outstanding as of September 30, 2019 are scheduled for delivery within the next twelve months. Purchase orders may be subject to cancellation or deferral by the customer prior to shipment. The level of unfilled purchase orders at any given date during the year will be materially affected by the timing of the Company’s receipt of purchase orders and the speed with which those orders are filled. Accordingly, the Company’s backlog as of September 30, 2019 may not necessarily represent the actual amount of shipments or sales for any future period.

Foreign Operations

Although we manufacture a significant portion of our products in the United States, we manufacture some products in Belgium, Canada, China, the Dominican Republic, France, Germany, Hong Kong, Hungary, India, Japan, Malaysia, Mexico, Morocco, Norway, Singapore, Sri Lanka, Sweden and the United Kingdom. Although the majority of sales of our products are made to customers (including distributors) located in the United States, our products are ultimately sold to and used by customers (including airlines and other end users of aircraft) throughout the world. A number of risks inherent in international operations could have a material adverse effect on our results of operations, including currency fluctuations, difficulties in staffing and managing multi-national operations, general economic and political uncertainties and potential for social unrest in countries in which we operate, limitations on our ability to enforce legal rights and remedies, restrictions on the repatriation of funds, change in trade policies, tariff regulation, difficulties in obtaining export and import licenses and the risk of government financed competition.

Environmental Matters

Our operations and facilities are subject to a number of federal, state, local and foreign environmental laws and regulations that govern, among other things, discharges of pollutants into the air and water, the generation, handling, storage and disposal of hazardous materials and wastes, the remediation of contamination and the health and safety of our employees. Environmental laws and regulations may require that the Company investigate and remediate the effects of the release or disposal of materials at sites associated with past and present operations. Certain facilities and third-party sites utilized by the Company have been identified as potentially responsible parties under the federal superfund laws and comparable state laws. The Company is currently involved in the investigation and remediation of a number of sites under applicable laws. For information regarding environmental accruals, see Note 15, “Environmental Liabilities,” to the consolidated financial statements included herein.

Employees

As of September 30, 2019, we had approximately 18,300 full-time, part-time and temporary employees from business units in continuing operations. Approximately 18% of our full-time and part-time employees were represented by labor unions. Collective bargaining agreements between us and these labor unions expire at various dates ranging from November 2019 to May 2023. We consider our relationship with our employees generally to be satisfactory.

Available Information

TD Group’s Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, including any amendments, will be made available free of charge on the Company’s website, *www.transdigm.com*, as soon as reasonably practicable, following the filing of the reports with the Securities and Exchange Commission. In addition, the Company’s website allows investors and other interested persons to sign up to automatically receive e-mail alerts when news releases and financial information is posted on the website. The SEC also maintains a website, www.sec.gov, that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. The information on or obtainable through our website is not incorporated into this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS

Set forth below are important risks and uncertainties that could negatively affect our business and financial condition and could cause our actual results to differ materially from those expressed in forward-looking statements contained in this report.

Our commercial business is sensitive to the number of flight hours that our customers’ planes spend aloft, the size and age of the worldwide aircraft fleet and our customers’ profitability. These items are, in turn, affected by general economic and geopolitical and other worldwide conditions.

Our commercial business is directly affected by, among other factors, changes in revenue passenger miles (RPMs), the size and age of the worldwide aircraft fleet, the percentage of the fleet that is out-of-warranty and changes in the profitability of the commercial airline industry. RPMs and airline profitability have historically been correlated with the general economic environment, although national and international events also play a key role. For example, in the past, the airline industry has been severely affected by the downturn in the global economy, higher fuel prices, the increased security concerns among airline customers following the events of September 11, 2001, the Severe Acute Respiratory Syndrome (SARS) epidemic, and the conflicts abroad, and could be impacted by future geopolitical or other worldwide events, such as war, terrorist acts, or a worldwide infectious disease outbreak. In addition, global market and economic conditions have been challenging with turbulence in the U.S. and international markets and economies and have prolonged declines in business and consumer spending. As a result of the substantial reduction in airline traffic resulting from these events, the airline industry incurred large losses and financial difficulties. Some carriers have also parked or retired a portion of their fleets and have reduced workforces and flights. During periods of reduced airline profitability, some airlines may delay purchases of spare parts, preferring instead to deplete existing inventories, and delay refurbishments and discretionary spending. If demand for spare parts decreases, there would be a decrease in demand for certain of our products. An adverse change in demand could impact our results of operations, collection of accounts receivable and our expected cash flow generation from current and acquired businesses which may adversely impact our financial condition and access to capital markets.

Our sales to manufacturers of aircraft are cyclical, and a downturn in sales to these manufacturers may adversely affect us.

Our sales to manufacturers of large commercial aircraft, such as The Boeing Company, Airbus S.A.S, and related OEM suppliers, as well as manufacturers of business jets (which collectively accounted for approximately 26% of our net sales in fiscal year 2019) have historically experienced periodic downturns. In the past, these sales have been affected by airline profitability, which is impacted by, among other things, fuel and labor costs, price competition, interest rates, downturns in the global economy and national and international events. In addition, sales of our products to manufacturers of business jets are impacted by, among other things, downturns in the global economy. Downturns adversely affect our net sales, gross margin and net income.

We rely heavily on certain customers for much of our sales.

Our largest customer for fiscal year 2019 was The Boeing Company (which includes Aviall, Inc.). The Boeing Company accounted for approximately 11% of our net sales in fiscal year 2019. Our top ten customers for fiscal year 2019 accounted for approximately 42% of our net sales. A material reduction in purchasing by one of our larger customers for any reason, including but not limited to economic downturn, decreased production, strike or resourcing, could have a material adverse effect on our net sales, gross margin and net income. In 2019, The Boeing Company announced a production rate decrease on the Boeing 737 MAX from 52 to 42 airplanes per month. The Company does not anticipate the current production rate decrease to have a material impact on the Company's financial results.

We generally do not have guaranteed future sales of our products. Further, when we enter into fixed price contracts with some of our customers, we take the risk for cost overruns.

As is customary in our business, we do not generally have long-term contracts with most of our aftermarket customers and, therefore, do not have guaranteed future sales. Although we have long-term contracts with many of our OEM customers, many of those customers may terminate the contracts on short notice and, in most cases, our customers have not committed to buy any minimum quantity of our products. In addition, in certain cases, we must anticipate the future volume of orders based upon the historic purchasing patterns of customers and upon our discussions with customers as to their anticipated future requirements, and this anticipated future volume of orders may not materialize.

We also have entered into multi-year, fixed-price contracts with some of our customers, pursuant to which we have agreed to perform the work for a fixed price and, accordingly, realize all the benefit or detriment resulting from any decreases or increases in the costs of making these products. Sometimes we accept a fixed-price contract for a product that we have not yet produced, and this increases the risk of cost overruns or delays in the completion of the design and manufacturing of the product. Most of our contracts do not permit us to recover increases in raw material prices, taxes or labor costs.

U.S. military spending is dependent upon the U.S. defense budget.

The military and defense market is significantly dependent upon government budget trends, particularly the U.S. Department of Defense (the "DOD") budget. In addition to normal business risks, our supply of products to the United States Government is subject to unique risks largely beyond our control. DOD budgets could be negatively impacted by several factors, including, but not limited to, a change in defense spending policy by the current presidential administration, the U.S. Government's budget deficits, spending priorities, the cost of sustaining the U.S. military presence internationally and possible political pressure to reduce U.S. Government military spending, each of which could cause the DOD budget to remain unchanged or to decline. A significant decline in U.S. military expenditures could result in a reduction in the amount of our products sold to the various agencies and buying organizations of the U.S. Government.

We intend to pursue acquisitions. Our business may be adversely affected if we cannot consummate acquisitions on satisfactory terms, or if we cannot effectively integrate acquired operations.

A significant portion of our growth has occurred through acquisitions. Any future growth through acquisitions will be partially dependent upon the continued availability of suitable acquisition candidates at favorable prices and upon advantageous terms and conditions. We intend to pursue acquisitions that we believe will present opportunities consistent with our overall business strategy. However, we may not be able to find suitable acquisition candidates to purchase or may be unable to acquire desired businesses or assets on economically acceptable terms or may be unable to receive necessary regulatory approvals or support. In addition, we may not be able to raise the capital necessary to fund future acquisitions. Because we may actively pursue a number of opportunities simultaneously, we may encounter unforeseen expenses, complications and delays, including regulatory complications or difficulties in employing sufficient staff and maintaining operational and management oversight.

We regularly engage in discussions with respect to potential acquisition and investment opportunities. If we consummate an acquisition, our capitalization and results of operations may change significantly. Future acquisitions could result in margin dilution and further likely result in the incurrence of additional debt and contingent liabilities and an increase in interest and amortization expenses or periodic impairment charges related to goodwill and other intangible assets as well as significant charges relating to integration costs.

Acquisitions involve risks that the businesses acquired will not perform in accordance with expectations and that business judgments concerning the value, strengths and weaknesses of businesses acquired will prove incorrect. In addition, we may not be able to successfully integrate any business we acquire into our existing business. The successful integration of new businesses depends on our ability to manage these new businesses and cut excess costs. The successful integration of future acquisitions may also require substantial attention from our senior management and the management of the acquired business, which could decrease the time that they have to service, attract customers and develop new products and services or attend to other acquisition opportunities.

We are subject to many of the foregoing risks in connection with our acquisition of Esterline completed in March 2019, and these risks may be exacerbated due to the scale and complexity of that acquisition as compared to our recent acquisitions. The acquisition has required and will continue to require extensive integration efforts. These efforts could result in significant unforeseen costs and require substantial attention from our senior management. If we are unable to successfully integrate Esterline or the acquisition otherwise does not perform to our expectations, our results of operations and financial condition may be adversely affected. It is also possible that the substantial management attention required by, and the indebtedness incurred in connection with the transaction could cause us to forgo other acquisition opportunities, particularly if we encounter unexpected costs or the acquisition otherwise does not perform to our expectations.

We are subject to certain unique business risks as a result of supplying equipment and services to the U.S. Government.

Companies engaged in supplying defense-related equipment and services to U.S. Government agencies, whether through direct contracts with the U.S. government or a as a subcontractor to customers contracting with the U.S. government, are subject to business risks specific to the defense industry. These risks include the ability of the U.S. Government to unilaterally:

- suspend us from receiving new contracts based on alleged violations of procurement laws or regulations;
- terminate existing contracts;
- revoke required security clearances;
- reduce the value of existing contracts; and
- audit our contract-related costs and fees, including allocated indirect costs.

Most of our U.S. Government contracts can be terminated by the U.S. Government at its convenience without significant notice. Termination for convenience provisions provide only for our recovery of costs incurred or committed, settlement expenses and profit on the work completed prior to termination.

On contracts for which the price is based on cost, the U.S. Government may review our costs and performance, as well as our accounting and general business practices. Based on the results of such audits, the U.S. Government may adjust our contract-related costs and fees, including allocated indirect costs. In addition, under U.S. Government purchasing regulations, some of our costs, including most financing costs, amortization of intangible assets, portions of research and development costs, and certain marketing expenses may not be subject to reimbursement.

Furthermore, even where the price is not based on cost, the U.S. Government may seek to review our costs to determine whether our pricing is “fair and reasonable.” Our subsidiaries are periodically subject to pricing reviews and government buying agencies that purchase some of our subsidiaries’ products are periodically subject to audits by the DOD Office of Inspector General (“OIG”) with respect to prices paid for such products. In the third quarter of fiscal 2019, we voluntarily refunded $16 million to the U.S. government following an OIG audit, and another OIG audit is underway. In addition, our defense-related business is the subject of an ongoing Congressional inquiry by the House Oversight Committee. Pricing reviews and government audits, including the audit underway, and the Congressional inquiry are costly and time consuming for our management and could distract from our ability to effectively manage the business. As a result of these reviews, audits and inquiries, we could be subject to providing further refunds to the U.S. Government or we could be asked to enter into an arrangement whereby our prices would be based on cost, the DOD could seek to pursue alternative sources of supply for our parts, or the U.S. government could take other adverse actions with respect to our contracts. Any of those occurrences could lead to a reduction in our revenue from, or the profitability of certain of our supply arrangements with, certain agencies and buying organizations of the U.S. Government.

If a government inquiry or investigation uncovers improper or illegal activities, we could be subject to civil or criminal penalties or administrative sanctions, including contract termination, fines, forfeiture of fees, suspension of payment and suspension or debarment from doing business with U.S. government agencies, any of which could materially adversely affect our reputation, business, financial condition and results of operations.

Moreover, U.S. Government purchasing regulations contain a number of additional operational requirements, which do not apply to entities not engaged in government contracting. Failure to comply with such government contracting requirements could result in civil and criminal penalties that could have a material adverse effect on the Company’s results of operations.

Our business may be adversely affected if we would lose our government or industry approvals or if more stringent government regulations are enacted or if industry oversight is increased.

The aerospace industry is highly regulated in the United States and in other countries. In order to sell our components, we and the components we manufacture must be certified by the FAA, the DOD and similar agencies in foreign countries and by individual manufacturers. If new and more stringent government regulations are adopted or if industry oversight increases, we might incur significant expenses to comply with any new regulations or heightened industry oversight. In addition, if material authorizations or approvals were revoked or suspended, our business would be adversely affected.

In addition to the aviation approvals, we are at times required to obtain approval from U.S. Government agencies to export our products. U.S. laws and regulations applicable to us include the Arms Export Control Act, the International Traffic in Arms Regulations ("ITAR"), the Export Administration Regulations ("EAR") and the trade sanctions laws and regulations administered by the United States Department of the Treasury's Office of Foreign Assets Control ("OFAC"). EAR restricts the export of dual-use products and technical data to certain countries, while ITAR restricts the export of defense products, technical data and defense services.

Failure to obtain approval to export or determination by the U.S. Government that we failed to receive required approvals or licenses could eliminate or restrict our ability to sell our products outside the United States, and the penalties that could be imposed by the U.S. Government for failure to comply with these laws could be significant.

Our indebtedness could adversely affect our financial health and could harm our ability to react to changes to our business and prevent us from fulfilling our obligations under our indebtedness.

We have a significant amount of indebtedness. As of September 30, 2019, our total indebtedness, excluding approximately $41.5 million of letters of credit outstanding, was approximately $16.9 billion, which was 120.7% of our total book capitalization as a result of special dividends being funded, in part, with indebtedness and the addition of approximately $4.0 billion in net new incremental borrowings during fiscal 2019 in connection with the financing of the Esterline acquisition.

In addition, we may be able to incur substantial additional indebtedness in the future. For example, on October 29, 2019, the Company entered into a purchase agreement in connection with a private offering of $2.65 billion aggregate principal amount in 5.50% senior subordinated notes due November 15, 2027. The settlement of the debt financing transaction occurred on November 13, 2019. The notes were issued at a price of 100% of their principal amount. The Company will use a portion of the net proceeds from the offering of the notes to redeem all of its outstanding (aggregate principal amount of $1.15 billion) 6.000% senior subordinated notes due 2022. Also, as of September 30, 2019, we had approximately $718.5 million of unused commitments under our revolving loan facility. Although our senior secured credit facility and the indentures governing the various senior subordinated notes outstanding (the “Indentures”) contain restrictions on the incurrence of additional indebtedness, these restrictions are subject to a number of significant qualifications and exceptions, and the indebtedness incurred in compliance with these qualifications and exceptions could be substantial. For example, if the usage of the revolving loan facility exceeds 35% of the total revolving commitments, the Company will be required to maintain a maximum consolidated net leverage ratio of net debt, as defined, to trailing four-quarter EBITDA As Defined. A breach of any of the covenants or an inability to comply with the required leverage ratio could result in a default under the senior secured credit facility or the Indentures.

An increase in our substantial indebtedness could also have other important consequences to investors. For example, it could:

- increase our vulnerability to general economic downturns and adverse competitive and industry conditions;
- increase the risk we are subjected to downgrade or put on a negative watch by the ratings agencies;
- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund working capital requirements, capital expenditures, acquisitions, research and development efforts and other general corporate requirements;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;
- place us at a competitive disadvantage compared to competitors that have less debt; and
- limit, along with the financial and other restrictive covenants contained in the documents governing our indebtedness, among other things, our ability to borrow additional funds, make investments and incur liens.

All of our debt under the senior secured credit facility, which includes $7.5 billion in term loans and a revolving loan facility of $760 million, bears interest at variable rates primarily based on the London interbank offered rate (LIBOR) for deposits of U.S. dollars. Accordingly, if LIBOR or other variable interest rates increase, our debt service expense will also increase. Interest rate swap and cap agreements are used to manage interest rate risk associated with variable rate borrowings under our credit facilities. For information about our interest rate swap and cap agreements, see Note 21, “Derivatives and Hedging Instruments,” in the notes to the consolidated financial statements included herein.

In addition, on July 27, 2017, the Financial Conduct Authority (FCA) in the U.K. announced that it would phase out LIBOR as a benchmark by the end of calendar year 2021. The expected discontinuation of LIBOR may require us to amend certain agreements governing our debt and, although the U.S. and other jurisdictions are working to replace LIBOR with alternative reference rates, we cannot predict what alternative index, margin adjustments and related terms would be negotiated with our counterparties. As a result, our interest expense could increase.

Our substantial level of indebtedness increases the possibility that we may be unable to generate cash sufficient to pay, when due, the principal of, interest on or other amounts due in respect of our indebtedness, including the Indentures. We cannot assure that our business will generate sufficient cash flow from operations or that future borrowings will be available to us under the senior secured credit facility or otherwise in amounts sufficient to enable us to service our indebtedness. If we cannot service our debt, we will have to take actions such as reducing or delaying capital investments, selling assets, restructuring or refinancing our debt or seeking additional equity capital.

To service our indebtedness, we will require a significant amount of cash. Our ability to generate cash depends on many factors beyond our control and any failure to meet our debt service obligations could harm our business, financial condition and results of operations.

Our ability to make payments on and to refinance our indebtedness, including the Indentures, amounts borrowed under the senior secured credit facility, amounts due under our Securitization Facility, and to fund our operations, will depend on our ability to generate cash in the future, which, to a certain extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control.

We cannot assure that our business will generate sufficient cash flow from operations, that currently anticipated cost savings and operating improvements will be realized on schedule, or at all, or that future borrowings will be available to us under the senior secured credit facility or otherwise in amounts sufficient to enable us to service our indebtedness, including the amounts borrowed under the senior secured credit facility, amounts borrowed under our Securitization Facility and the Indentures, or to fund our other liquidity needs. If we cannot service our debt, we will have to take actions such as reducing or delaying capital investments, selling assets, restructuring or refinancing our debt or seeking additional equity capital. We cannot assure that any of these remedies could, if necessary, be effected on commercially reasonable terms, or at all. Our ability to restructure or refinance our debt will depend on the condition of the capital markets and our financial condition at such time. Any refinancing of our debt could be at higher interest rates and may require us to comply with more onerous covenants, which could further restrict our business operations. The terms of existing or future debt instruments, the Securitization Facility, the Indentures and the senior secured credit facility may restrict us from adopting any of these alternatives. In addition, any failure to make payments of interest and principal on our outstanding indebtedness on a timely basis would likely result in a reduction of our credit rating, which could harm our ability to incur additional indebtedness on acceptable terms and would otherwise adversely affect the Indentures.

The terms of the senior secured credit facility and Indentures may restrict our current and future operations, particularly our ability to respond to changes or to take certain actions.

Our senior secured credit facility and the Indentures contain a number of restrictive covenants that impose significant operating and financial restrictions on TD Group, TransDigm Inc. and its subsidiaries (in the case of the senior secured credit facility) and TransDigm Inc. and its subsidiaries (in the case of the Indentures) and may limit their ability to engage in acts that may be in our long-term best interests. The senior secured credit facility and Indentures include covenants restricting, among other things, the ability of TD Group, TransDigm Inc. and its subsidiaries (in the case of the senior secured credit facility) and TransDigm Inc. and its subsidiaries (in the case of the Indentures) to:

- incur or guarantee additional indebtedness or issue preferred stock;
- pay distributions on, redeem or repurchase our capital stock or redeem or repurchase our subordinated debt;
- make investments;
- sell assets;
- enter into agreements that restrict distributions or other payments from our restricted subsidiaries to us;
- incur or allow to exist liens;
- consolidate, merge or transfer all or substantially all of our assets;
- engage in transactions with affiliates;
- create unrestricted subsidiaries; and
- engage in certain business activities.

A breach of any of these covenants could result in a default under the senior secured credit facility or the Indentures. If any such default occurs, the lenders under the senior secured credit facility and the holders of the senior subordinated notes may elect to declare all outstanding borrowings, together with accrued interest and other amounts payable thereunder, to be immediately due and payable. The lenders under the senior secured credit facility also have the right in these circumstances to terminate any commitments they have to provide further borrowings. In addition, following an event of default under the senior secured credit facility, the lenders under that facility will have the right to proceed against the collateral granted to them to secure the debt, which includes our available cash, and they will also have the right to prevent us from making debt service payments on the senior subordinated notes. If the debt under the senior secured credit facility or the senior subordinated notes were to be accelerated, we cannot assure that our assets would be sufficient to repay in full our debt.

We could incur substantial costs as a result of violations of or liabilities under environmental laws and regulations.

Our operations and facilities are subject to a number of federal, state, local and foreign environmental laws and regulations that govern, among other things, discharges of pollutants into the air and water, the generation, handling, storage and disposal of hazardous materials and wastes, the remediation of contamination and the health and safety of our employees. Environmental laws and regulations may require that the Company investigate and remediate the effects of the release or disposal of materials at sites associated with past and present operations. Certain facilities and third-party sites utilized by subsidiaries of the Company have been identified as potentially responsible parties under the federal superfund laws and comparable state laws. The Company is currently involved in the investigation and remediation of a number of sites under applicable laws.

Estimates of the Company's environmental liabilities are based on current facts, laws, regulations and technology. These estimates take into consideration the Company's prior experience and professional judgment of the Company's environmental advisors. Estimates of the Company's environmental liabilities are further subject to uncertainties regarding the nature and extent of site contamination, the range of remediation alternatives available, evolving remediation standards, imprecise engineering evaluations and cost estimates, the extent of corrective actions that may be required and the number and financial condition of other potentially responsible parties, as well as the extent of their responsibility for the remediation.

Accordingly, as investigation and remediation proceed, it is likely that adjustments in the Company's accruals will be necessary to reflect new information. The amounts of any such adjustments could have a material adverse effect on the Company's results of operations or cash flows in a given period. Based on currently available information, however, the Company does not believe that future environmental costs in excess of those accrued with respect to sites for which the Company has been identified as a potentially responsible party are likely to have a material adverse effect on the Company's financial condition.

We are dependent on our senior management team and highly trained employees and any work stoppage or difficulty hiring similar employees could adversely affect our business.

Because our products are complicated and highly engineered, we depend on an educated and trained workforce. There is substantial competition for skilled personnel in the aircraft component industry, and we could be adversely affected by a shortage of skilled employees. We may not be able to fill new positions or vacancies created by expansion or turnover or attract and retain qualified personnel.

Although we believe that our relations with our employees are satisfactory, we cannot assure that we will be able to negotiate a satisfactory renewal of collective bargaining agreements or that our employee relations will remain stable. Because we maintain a relatively small inventory of finished goods, any work stoppage could materially and adversely affect our ability to provide products to our customers.

In addition, our success depends in part on our ability to attract and motivate our senior management and key employees. Achieving this objective may be difficult due to a variety of factors, including fluctuations in economic and industry conditions, competitors' hiring practices, and the effectiveness of our compensation programs. Competition for qualified personnel can be intense. A loss of senior management and key personnel, or failure to attract qualified new talent could prevent us from capitalizing on business opportunities, and our operating results and/or market value could be adversely affected. The Board continually monitors this risk and we believe that the Board's succession plan, together with our straightforward strategy, clear value drivers, decentralized nature and the quality of managers running our operating units helps to mitigate this risk.

We may be subject to periodic litigation and regulatory proceedings, including Fair Labor Standards Act and state wage and hour class action lawsuits, which may adversely affect our business and financial performance.

From time to time, we are involved in lawsuits and regulatory actions brought or threatened against us in the ordinary course of business. These actions and proceedings may involve claims for, among other things, compensation for alleged personal injury, workers' compensation, employment discrimination, or breach of contract. In addition, we may be subject to class action lawsuits, including those involving allegations of violations of consumer product statutes or the Fair Labor Standards Act and state wage and hour laws. Due to the inherent uncertainties of litigation, we cannot accurately predict the ultimate outcome of any such actions or proceedings. The outcome of litigation, particularly class action lawsuits and regulatory actions, is difficult to assess or quantify, as plaintiffs may seek recovery of very large or indeterminate amounts in these types of lawsuits, and the magnitude of the potential loss may remain unknown for substantial periods of time. In addition, plaintiffs in many types of actions may seek punitive damages, civil penalties, consequential damages or other losses, or injunctive or declaratory relief. These proceedings could result in substantial cost and may require us to devote substantial resources to defend ourselves. The ultimate resolution of these matters through settlement, mediation, or court judgment could have a material impact on our financial condition, results of operations, and cash flows.

Our business is dependent on the availability of certain components and raw materials from suppliers.

Our business is affected by the price and availability of the raw materials and component parts that we use to manufacture our components. Our business, therefore, could be adversely impacted by factors affecting our suppliers (such as the destruction of our suppliers' facilities or their distribution infrastructure, a work stoppage or strike by our suppliers' employees or the failure of our suppliers to provide materials of the requisite quality), or by increased costs of such raw materials or components if we were unable to pass along such price increases to our customers. Because we maintain a relatively small inventory of raw materials and component parts, our business could be adversely affected if we were unable to obtain these raw materials and components from our suppliers in the quantities we require or on favorable terms. Although we believe in most cases that we could identify alternative suppliers, or alternative raw materials or component parts, the lengthy and expensive FAA and OEM certification processes associated with aerospace products could prevent efficient replacement of a supplier, raw material or component part.

Our operations depend on our manufacturing facilities, which are subject to physical and other risks that could disrupt production.

A number of our manufacturing facilities are located in the greater Los Angeles area, an area known for earthquakes and fires, and are thus vulnerable to damage. In addition, a number of our manufacturing facilities are located along the Eastern seaboard area susceptible to hurricanes. We are also vulnerable to damage from other types of disasters, including power loss, fire, explosions, floods, communications failures, terrorist attacks and similar events. Disruptions could also occur due to cyber-attacks, computer or equipment malfunction (accidental or intentional), operator error or process failures. Should insurance or other risk transfer mechanisms, such as our existing disaster recovery and business continuity plans, be insufficient to recover all costs, we could experience a material adverse effect on our business, financial condition and results of operations.

Operations and sales outside of the United States may be subject to additional risks.

A number of risks inherent in international operations could have a material adverse effect on our results of operations, including currency fluctuations, difficulties in staffing and managing multi-national operations, general economic and political uncertainties and potential for social unrest in countries in which we operate, limitations on our ability to enforce legal rights and remedies, restrictions on the repatriation of funds, change in trade policies, tariff regulation, difficulties in obtaining export and import licenses and the risk of government financed competition. Furthermore, the Company is subject to laws and regulations, such as the Foreign Corrupt Practices Act, UK Bribery Act and similar local anti-bribery laws, which generally prohibit companies and their employees, agents and contractors from making improper payments for the purpose of obtaining or retaining business. Failure to comply with these laws could subject the Company to civil and criminal penalties that could materially adversely affect the Company's results of operations.

We face significant competition.

We operate in a highly competitive global industry and compete against a number of companies. Competitors in our product lines are both U.S. and foreign companies and range in size from divisions of large public corporations to small privately held entities. We believe that our ability to compete depends on high product performance, consistent high quality, short lead-time and timely delivery, competitive pricing, superior customer service and support and continued certification under customer quality requirements and assurance programs. We may have to adjust the prices of some of our products to stay competitive.

We could be adversely affected if one of our components causes an aircraft to crash.

Our operations expose us to potential liabilities for personal injury or death as a result of the failure of an aircraft component that we have designed, manufactured or serviced. While we maintain liability insurance to protect us from future product liability claims, in the event of product liability claims our insurers may attempt to deny coverage or any coverage we have may not be adequate. We also may not be able to maintain insurance coverage in the future at an acceptable cost. Any liability not covered by insurance or for which third party indemnification is not available could result in significant liability to us.

In addition, a crash caused by one of our components could damage our reputation for quality products. We believe our customers consider safety and reliability as key criteria in selecting a provider of aircraft components. If a crash were to be caused by one of our components, or if we were to otherwise fail to maintain a satisfactory record of safety and reliability, our ability to retain and attract customers may be materially adversely affected.

We could incur substantial costs as a result of data protection concerns.

The interpretation and application of data protection laws in the U.S., Europe, including but not limited to the General Data Protection Regulation (the “GDPR”) and the California Consumer Privacy Act (the “CCPA”), and elsewhere are uncertain and evolving. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our data practices. Complying with these various laws is difficult and could cause us to incur substantial costs or require us to change our business practices in a manner adverse to our business. Further, although we have implemented internal controls and procedures designed to ensure compliance with the GDPR, CCPA and other privacy-related laws, rules and regulations (collectively, the “Data Protection Laws”), there can be no assurance that our controls and procedures will enable us to be fully compliant with all Data Protection Laws.

Despite our efforts to protect sensitive information and confidential and personal data, comply with applicable laws, rules and regulations and implement data security measures, our facilities, and systems may be vulnerable to security breaches and other data loss, including cyber-attacks and, in fact, we have experienced data security incidents that have not had a material impact on our financial results. In addition, it is not possible to predict the impact on our business of the future loss, alteration or misappropriation of information in our possession related to us, our employees, former employees, customers, suppliers or others. This could lead to negative publicity, legal claims, theft, modification or destruction of proprietary information or key information, damage to or inaccessibility of critical systems, manufacture of defective products, production downtimes, operational disruptions and other significant costs, which could adversely affect our reputation, financial condition and results of operations.

We have recorded a significant amount of intangible assets, which may never generate the returns we expect.

Mergers and acquisitions have resulted in significant increases in identifiable intangible assets and goodwill. Identifiable intangible assets, which primarily include trademarks, trade names, customer relationships, and technology, were approximately $2.7 billion at September 30, 2019, representing approximately 17% of our total assets. Goodwill recognized in accounting for the mergers and acquisitions was approximately $7.8 billion at September 30, 2019, representing approximately 48% of our total assets. We may never realize the full value of our identifiable intangible assets and goodwill, and to the extent we were to determine that our identifiable intangible assets or our goodwill were impaired within the meaning of applicable accounting standards, we would be required to write-off the amount of any impairment.

Volatility in the equity markets or interest rates could substantially increase our pension costs and required pension contributions.

The Company sponsors qualified defined benefit pension plans and a nonqualified postretirement plan. Certain qualified defined benefit pension plans are funded with trust assets invested in a diversified portfolio of debt and equity securities and other investments. Among other factors, changes in interest rates, investment returns and the market value of plan assets can (i) affect the level of plan funding; (ii) cause volatility in the net periodic pension cost; and (iii) increase our future contribution requirements. A significant decrease in investment returns or the market value of plan assets or a significant decrease in interest rates could increase our net periodic pension costs and adversely affect our results of operations. A significant increase in our contribution requirements with respect to our qualified defined benefit pension plans could have an adverse impact on our cash flow.

We may be subject to risks relating to changes in its tax rates or exposure to additional income tax liabilities.

We are subject to income taxes in the United States and various non-U.S. jurisdictions. The Company’s domestic and international tax liabilities are dependent upon the location of earnings among these different jurisdictions. The Company’s future results of operations could be adversely affected by changes in the Company’s effective tax rate as a result of changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of deferred tax assets, challenges by tax authorities or changes in tax laws or regulations. In addition, the amount of income taxes paid by the Company is subject to ongoing audits by U.S. federal, state and local tax authorities and by non-U.S. tax authorities. If these audits result in assessments different from amounts reserved, future financial results may include unfavorable adjustments to the Company’s tax liabilities, which could have a material adverse effect on the Company’s results of operations.

Our stock price may be volatile, and an investment in our common stock could suffer a decline in value.

There has been significant volatility in the market price and trading volume of equity securities, which is unrelated to the operating performance of the companies issuing the securities. These market fluctuations may negatively affect the market price of our common stock. Shareholders may not be able to sell their shares at or above the purchase price due to fluctuations in the market price of our common stock. Such changes could be caused by changes in our operating performance or prospects, including possible changes due to the cyclical nature of the aerospace industry and other factors such as fluctuations in OEM and aftermarket ordering, which could cause short-term swings in profit margins. Or such changes could be unrelated to our operating performance, such as changes in market conditions affecting the stock market generally or the stocks of aerospace companies or changes in the outlook for our common stock, such as changes to or the confidence in our business strategy, changes to or confidence in our management, or expectations for future growth of the Company.

Future sales of our common stock in the public market could lower our share price.

We may sell additional shares of common stock into the public markets or issue convertible debt securities to raise capital in the future. The market price of our common stock could decline as a result of sales of a large number of shares of our common stock in the public markets or the perception that these sales could occur. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities to raise capital at a time and price that we deem appropriate.

Our corporate documents and Delaware law contain certain provisions that could discourage, delay or prevent a change in control of our company.

Provisions in our amended and restated certificate of incorporation and bylaws may discourage, delay or prevent a merger or acquisition involving us that our stockholders may consider favorable. For example, our amended and restated certificate of incorporation authorizes our Board of Directors to issue up to 149,600,000 shares of “blank check” preferred stock. Without stockholder approval, the Board of Directors has the authority to attach special rights, including voting and dividend rights, to this preferred stock. With these rights, holders of preferred stock could make it more difficult for a third party to acquire us. Our amended and restated certificate of incorporation also provides that the affirmative vote of the holders of at least 75% of the voting power of our issued and outstanding capital stock, voting together as a single class, is required for the alteration, amendment or repeal of certain provisions of our amended and restated certificate of incorporation and certain provisions of our amended and restated bylaws, including the provisions relating to our stockholders’ ability to call special meetings, notice provisions for stockholder business to be conducted at an annual meeting, requests for stockholder lists and corporate records, nomination and removal of directors, and filling of vacancies on our Board of Directors.

We are also subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law. Under these provisions, if anyone becomes an “interested stockholder,” we may not enter into a “business combination” with that person for three years without special approval, which could discourage a third party from making a takeover offer and could delay or prevent a change of control. For purposes of Section 203, “interested stockholder” means, generally, someone owning 15% or more of our outstanding voting stock or an affiliate of ours that owned 15% or more of our outstanding voting stock during the past three years, subject to certain exceptions as described in Section 203.

We do not regularly declare and pay quarterly or annual cash dividends on our stock.

Notwithstanding special cash dividends, of which the most recent declaration by the Company’s Board of Directors occurred on August 6, 2019 in the amount of $30.00 per outstanding share of common stock and and cash dividend equivalent payments on options granted under its stock incentive plans, we do not anticipate declaring regular quarterly or annual cash dividends on our common stock or any other equity security in the foreseeable future.

The amounts that may be available to us to pay future special cash dividends are restricted under our debt and other agreements. Any payment of special cash dividends on our common stock in the future will be at the discretion of our Board of Directors and will depend on our results of operations, earnings, capital requirements, financial condition, future prospects, contractual restrictions and other factors deemed relevant by our Board of Directors. Therefore, shareholders should not rely on regular quarterly or annual dividend income from shares of our common stock and should not rely on special dividends with any regularity or at all.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

TransDigm's principal owned properties (defined as greater than 20,000 square feet or related to a principal operation) as of September 30, 2019 are as follows:

Location	Reporting Segment	Square Footage
Brea, CA	Airframe	315,000
Stillington, United Kingdom	Airframe	274,800
Montreal, Canada	Airframe	271,700
Miesbach, Germany	Power & Control	242,000
Liberty, SC	Power & Control	219,000
Waco, TX	Power & Control	218,800
Ingolstadt, Germany	Airframe	191,900
Champagne, France	Airframe	189,100
Kent, OH	Airframe	185,000
Liverpool, NY	Power & Control	176,800
Bridport, United Kingdom	Airframe	174,700
Union Gap, WA	Airframe	142,000
Coachella, CA	Power & Control	140,000
Marolles, France	Power & Control	139,900
Phoenix, AZ	Airframe	138,700
Paks, Hungary	Airframe	137,800
Los Angeles, CA	Power & Control	131,000
Kortrijk, Belgium	Airframe	130,000
Bohemia, NY	Power & Control	124,000
Buena Park, CA	Power & Control	115,000
Westbury, NY	Power & Control	112,300
Llangeinor, United Kingdom	Airframe	110,000
Bourges, France	Power & Control	109,500
Kent, WA	Airframe	100,000
Valencia, CA	Airframe	88,400
Letchworth, United Kingdom	Airframe	88,200
Placentia, CA	Airframe	86,600
Addison, IL	Power & Control	83,300
Herstal, Belgium	Airframe	73,700
Niort, France	Airframe	69,000
Painesville, OH	Power & Control	63,900
Clearwater, FL	Power & Control	61,000
South Euclid, OH	Power & Control	60,000
Wichita, KS	Power & Control	57,000
Branford, CT	Airframe	52,000
Xenia, OH	Airframe	51,000
Avenel, NJ	Power & Control	48,500
Rancho Cucamonga, CA	Power & Control	47,000
Sarralbe, France	Power & Control	45,200
Valencia, CA	Airframe	38,000
Pennsauken, NJ	Airframe	38,000
Ryde, United Kingdom	Power & Control	33,200
Rancho Cucamonga, CA	Airframe	32,700
Sarralbe, France	Non-aviation	32,700
Cluses, France	Non-aviation	29,500
Melaka, Malaysia	Power & Control	24,800
Coimbatore, India	Non-aviation	21,000
Deerfield Beach, FL	Non-aviation	20,000

The Brea, Liberty, Kent (Ohio), Union Gap, Bohemia, Addison, Kent (Washington), 88,400 square feet Valencia, Coachella and 47,000 square feet Rancho Cucamonga properties are subject to mortgage liens under our senior secured credit facility and our 6.25% secured notes due March 15, 2026.

TransDigm's principal leased properties (defined as greater than 20,000 square feet or related to a principal operation) as of September 30, 2019 are as follows:

Location	Reporting Segment	Square Footage
East Camden, AR	Power & Control	276,000
Everett, WA	Airframe	216,000
Nittambuwa, Sri Lanka	Airframe	168,000
Santa Ana, CA	Airframe	159,200
Holmestrand, Norway	Airframe	149,300
Dayton, NV	Airframe	144,000
Tijuana, Mexico	Airframe	141,000
Tijuana, Mexico	Non-aviation	129,200
Everett, WA	Airframe	121,000
Whippany, NJ	Power & Control	115,300
Tanger, Morocco	Non-aviation	115,200
Whippany, NJ	Power & Control	114,300
Farnborough, United Kingdom	Power & Control	103,400
Sylmar, CA	Airframe	103,000
Goldsboro, NC	Power & Control	101,000
Kunshan, China	Airframe	100,600
Fullerton, CA	Airframe	100,000
Anaheim, CA	Airframe	99,900
Elkhart, IN	Non-aviation	91,500
Davis Junction, IL	Airframe	84,500
Kanata, Canada	Airframe	82,900
Miesbach, Germany	Power & Control	80,800
Kunshan, China	Non-aviation	75,300
Paso Robles, CA	Non-aviation	72,600
Camarillo, CA	Power & Control	70,000
Gloucestor, United Kingdom	Airframe	67,800
Tijuana, Mexico	Power & Control	63,500
Tijuana, Mexico	Non-aviation	61,300
Matamoros, Mexico	Power & Control	60,500
Melbourne, FL	Power & Control	52,100
Lillington, NC	Power & Control	48,800
Sugar Grove, IL	Airframe	45,000
Zunyi, China	Power & Control	43,000
La Ferte Benard, France	Non-aviation	42,000
Harelbeke, Belgium	Airframe	40,500
Tempe, AZ	Power & Control	40,200
Santiago, Dominican Republic	Non-aviation	40,000
Brea, CA	Airframe	39,000
Chongqing, China	Airframe	37,700
Collegeville, PA	Airframe	37,000
Rancho Santa Margarita, CA	Airframe	35,200
Northridge, CA	Power & Control	35,000
Bangalore, India	Non-aviation	28,200
Ashford, United Kingdom	Power & Control	28,000
London, United Kingdom	Airframe	27,400
Nogales, Mexico	Airframe	27,000

Location	Reporting Segment	Square Footage
Toulouse, France	Airframe	26,000
Bridgend, United Kingdom	Airframe	24,800
Harrow, United Kingdom	Non-aviation	24,500
Duluth, GA	Airframe	22,800
Ravenna, OH	Airframe	22,500
Platteville, WI	Airframe	21,200
Pennsauken, NJ	Airframe	20,500
Cleveland, OH	Corporate	20,100

Our Cleveland, OH and Pasadena, CA corporate facilities house our principal executive offices, and we currently lease approximately 20,100 square feet and 5,300 square feet, respectively, for those purposes. TransDigm also leases certain of its other non-material facilities. Management believes that our machinery, plants and offices are in satisfactory operating condition and that it will have sufficient capacity to meet foreseeable future needs without incurring significant additional capital expenditures.

ITEM 3. LEGAL PROCEEDINGS

We and certain of our current or former officers and directors are defendants in a consolidated securities class action captioned *In re TransDigm Group, Inc. Securities Litigation*, Case No. 1:17-cv-01677-DCN (N.D. Ohio). The cases were originally filed on August 10, 2017, and September 18, 2017 and were consolidated on December 5, 2017. The plaintiffs allege that the defendants made false or misleading statements with respect to, or failed to disclose, the impact of certain alleged business practices in connection with sales to the U.S. government on the Company’s growth and profitability. The plaintiffs assert claims under Section 10(b) of the Exchange Act and Rule 10b-5 promulgated thereunder and Section 20(a) of the Exchange Act, and seek unspecified monetary damages and other relief. In addition, we, as nominal defendant, and certain of our current or former officers and directors are defendants in a shareholder derivative action captioned *Sciabacucchi v. Howley et al.*, No. 1:17-cv-1971-DCN (N.D. Ohio). The case was filed on September 19, 2017. The plaintiffs allege breach of fiduciary duty and other claims arising out of substantially the same actions or inactions alleged in the securities class actions described above. This action has been stayed pending the outcome of a motion to dismiss on the securities class action. Although we are only a nominal defendant in the derivative action, we could have indemnification obligations and/or be required to advance the costs and expenses of the officer and director defendants in the action.

We intend to vigorously defend these matters and believe they are without merit. We also believe we have sufficient insurance coverage available for these matters. Therefore, we do not expect these matters to have a material adverse impact on our financial condition or results of operations. However, given the preliminary status of the litigation, it is difficult to predict the likelihood of an adverse outcome or estimate a range of any potential loss.

PART II

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

Market Information

Our common stock is traded on the New York Stock Exchange, or NYSE, under the ticker symbol “TDG.”

Holders

As of October 21, 2019, there were 33 stockholders of record of our common stock and approximately 134,000 of beneficial stockholders, which includes an estimated amount of stockholders who have their shares held in their accounts by banks and brokers.

Dividend Policy

During fiscal 2019, TD Group’s Board of Directors authorized and declared a special cash dividend of $30.00 (in August 2019) on each outstanding share of common stock and cash dividend equivalent payments under options granted under its stock incentive plans. No dividends were declared during fiscal 2018.

We do not anticipate declaring regular quarterly or annual cash dividends on our common stock in the near future. Any declaration of special cash dividends on our common stock in the future will be at the discretion of our Board of Directors and will depend upon our results of operations, earnings, capital requirements, financial condition, future prospects, contractual restrictions under the senior secured credit facility and Indentures, the availability of surplus under Delaware law and other factors deemed relevant by our Board of Directors. TD Group is a holding company and conducts all of its operations through direct and indirect subsidiaries.

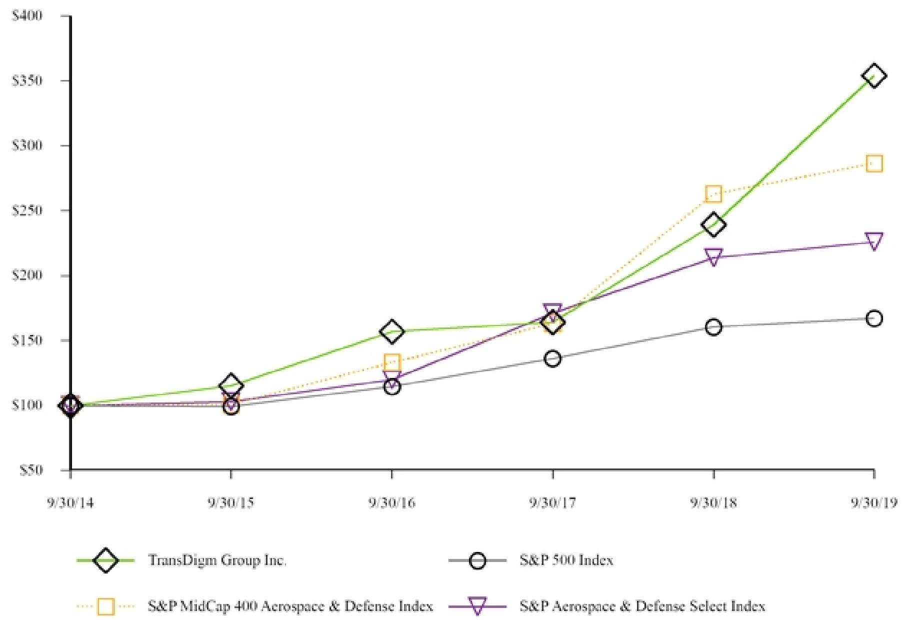
Unless TD Group receives dividends, distributions, advances, transfers of funds or other payments from our subsidiaries, TD Group will be unable to pay any dividends on our common stock in the future. The ability of any subsidiaries to take any of the foregoing actions is limited by the terms of our senior secured credit facility and Indentures and may be limited by future debt or other agreements that we may enter into. Also, the Company currently has an accumulated deficit which could limit or restrict our ability to pay dividends in the future.

Performance Graph

Set forth below is a line graph comparing the cumulative total return of a hypothetical investment in the shares of common stock of TD Group with the cumulative total return of a hypothetical investment in each of the S&P 500 Index, the S&P Aerospace & Defense Select Index and the S&P MidCap 400 Aerospace & Defense Index. An investment of $100 (with reinvestment of all dividends) is assumed to have been made in our common stock and in each of the indexes on September 30, 2014, and its relative performance is tracked through September 30, 2019

The following performance graph and related information shall not be deemed “soliciting material” nor to be “filed” with the SEC, nor shall such information be incorporated by reference into any future filings under the Securities Act of 1933 or the Securities Exchange Act of 1934, each as amended, except to the extent we specifically incorporate it by reference into such filing.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*
Among TransDigm Group Inc., the S&P 500 Index, S&P Aerospace & Defense Select Index and
the S&P MidCap 400 Aerospace & Defense Index



*$100 invested on 9/30/14 in stock or index, including reinvestment of dividends.

	9/30/14	9/30/15	9/30/16	9/30/17	9/30/18	9/30/19
TransDigm Group Inc.	100.00	115.23	156.85	164.27	239.22	354.00
S&P 500 Index	100.00	99.39	114.72	136.07	160.44	167.27
S&P Aerospace & Defense Select Index	100.00	102.94	119.95	171.11	213.77	225.91
S&P MidCap 400 Aerospace & Defense Index	100.00	100.89	133.13	163.10	262.80	286.46

Purchases of Equity Securities by the Issuer or Affiliated Purchaser

On November 8, 2017, our Board of Directors, authorized a stock repurchase program permitting repurchases of our outstanding shares not to exceed $650 million in the aggregate, subject to any restrictions specified in the Credit Agreement and/or Indentures governing the existing Notes as described within the *Liquidity and Capital Resources* section of Item 7. “Management’s Discussion and Analysis of Financial Conditions and Results of Operations." No repurchases were made under the program during the fiscal years ended September 30, 2019 and 2018. As of September 30, 2019, $650 million in repurchases are allowable under the program subject to any restrictions specified in the Credit Agreement and/or Indentures governing the existing Notes.

During the fiscal year ended September 30, 2018, the Company received 2,119 shares as forfeitures in lieu of payment for withholding taxes on the vesting of restricted stock. The deemed gross cost of the shares was approximately $0.6 million at a weighted-average price per share $274.62. No restricted stock units remained outstanding as of September 30, 2018.

ITEM 6. SELECTED FINANCIAL DATA

The following table sets forth selected historical consolidated financial and other data of TD Group for the fiscal years ended September 30, 2015 to 2019, which have been derived from TD Group's audited consolidated financial statements.

Separate historical financial information of TransDigm Inc. is not presented since the 6.00% Senior Subordinated Notes issued in June 2014 (the "2022 Notes"), the 6.50% Senior Subordinated Notes issued June 2014 (the "2024 Notes"), the 6.50% Senior Subordinated Notes issued May 2015 (the "2025 Notes"), the 6.375% Senior Subordinated Notes issued June 2016 (the "6.375% 2026 Notes"), the 6.25% Senior Secured Notes issued in January 2019 (the "2026 Secured Notes") and the 7.50% Senior Subordinated Notes issued February 2019 (the "2027 Notes") (also together with the 2022 Notes, the 2024 Notes, the 2025 Notes, the 6.375% 2026 Notes, the 2026 Secured Notes and the 2027 Notes, the "Notes") are fully and unconditionally guaranteed on a senior subordinated basis by TD Group, TransDigm UK and all of TransDigm Inc.'s Domestic Restricted Subsidiaries and because TD Group has no significant operations or assets separate from its investment in TransDigm Inc.

Separate financial information of TransDigm UK Holdings plc ("TransDigm UK") is not presented because TransDigm UK's 6.875% Senior Subordinated Notes issued in May 2018 (the "6.875% 2026 Notes") are fully and unconditionally guaranteed on a senior subordinated basis by TD Group, TransDigm Inc., and all of TransDigm Inc.'s Domestic Restricted Subsidiaries.

Acquisitions of businesses and product lines completed by TD Group during the last five fiscal years are as follows:

Date	Acquisition
March 26, 2015	Telair Cargo Group (comprised of Telair International GmbH ("Telair Int'l"), Telair US LLC and Nordisk Aviation Products)
March 31, 2015	Franke Aquarotter GmbH ("Adams Rite Aerospace GmbH")
May 14, 2015	Pexco LLC ("Pexco Aerospace")
August 19, 2015	PneuDraulics, Inc. ("PneuDraulics")
January 4, 2016	Breeze-Eastern Corporation ("Breeze-Eastern")
June 23, 2016	Data Device Corporation ("DDC")
September 23, 2016	Young & Franklin Inc. / Tactair Fluid Controls Inc. ("Y&F/Tactair")
February 22, 2017	Schroth Safety Products Group ("Schroth")
May 5, 2017, May 31, 2017 and June 1, 2017	North Hills Signal Processing Corp, Cablecraft Motion Controls LLC and Preece Incorporated (together, the "Third Quarter 2017 Acquisitions")
March 15, 2018	Kirkhill Elastomers ("Kirkhill")
April 24, 2018 et al.	Extant Components Group Holdings, Inc. (together with related subsequent product line acquisitions, "Extant")
July 13, 2018	Skandia Inc. ("Skandia")
March 14, 2019	Esterline Technologies Corporation ("Esterline")

All of the acquisitions were accounted for using the acquisition method. The results of operations of the acquired businesses and product lines are included in TD Group's consolidated financial statements from the effective date of each acquisition.

On July 21, 2019, TransDigm entered into a binding offer (the "Put Agreement") with Eaton Corporation plc ("Eaton") for the the acquisition by Eaton of the shares of Souriau SAS, Souriau USA Inc. and Sunbank Family of Companies LLC (collectively, "Souriau-Sunbank"). Pursuant to the terms of the Put Agreement, after completion of the consultation process with the Business' French works council, TransDigm had the right to require Eaton to enter into a securities purchase agreement (the "Purchase Agreement") providing for the purchase by Eaton from TransDigm of the shares of Souriau-Sunbank. The Purchase Agreement was entered into by the parties on October 28, 2019. Pursuant to the terms of the Purchase Agreement, Eaton will purchase the shares of the Souriau-Sunbank for a cash purchase price of approximately $920 million.

The transaction is subject to execution and delivery of the Purchase Agreement and other definitive agreements, the satisfaction or waiver of customary closing conditions and receipt of required regulatory approvals, all of which have been received other than the French foreign investment approval. The parties expect to complete the transaction during the first quarter of fiscal 2020. Therefore, Souriau-Sunbank is classified as held-for-sale as of September 30, 2019. The results of operations of Souriau-Sunbank are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented since the date acquired. Further disclosure related to Souriau-Sunbank's discontinued operations is included within Note 23, "Discontinued Operations," to the consolidated financial statements.

On September 20, 2019, TransDigm completed the divestiture of its Esterline Interface Technology ("EIT") group of businesses to an affiliate of KPS Capital Partners, LP for approximately $190 million. EIT was acquired by TransDigm as part of its acquisition of Esterline Technologies Corporation in March 2019. The results of operations of EIT are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented since the date acquired. Further disclosure related to EIT's discontinued operations is included within Note 23, "Discontinued Operations," to the consolidated financial statements.

In connection with the settlement of a Department of Justice investigation into the competitive effects of the acquisition, during the fourth quarter of 2017, the Company committed to dispose of the Schroth business. Therefore, Schroth was classified as held-for-sale beginning in the fourth quarter of fiscal 2017. On January 26, 2018, the Company completed the sale of Schroth in a management buyout to a private equity fund and certain members of Schroth management for approximately $61.4 million, which included a working capital adjustment of $0.3 million that was paid in July 2018. Further disclosure related to Schroth's discontinued operations is included within Note 23, "Discontinued Operations," to the consolidated financial statements.

The information presented below should be read together with Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and accompanying notes included elsewhere herein.

	Fiscal Years Ended September 30,				
	2019	2018	2017	2016	2015
	(in thousands, except per share amounts)				
Statement of Income Data:					
Net sales	$ 5,223,203	$ 3,811,126	$ 3,504,286	$ 3,171,411	$ 2,707,115
Gross profit[1]	2,809,271	2,177,510	1,984,627	1,728,063	1,449,845
Selling and administrative expenses	747,773	449,676	412,555	383,319	324,097
Amortization of intangible assets	134,952	72,454	89,226	77,445	54,219
Income from operations[1]	1,926,546	1,655,380	1,482,846	1,267,299	1,071,529
Interest expense—net	859,753	663,008	602,589	483,850	418,785
Refinancing costs	3,013	6,396	39,807	15,794	18,393
Other expense (income)[2]	915	419	3,020	(461)	(2,473)
Income from continuing operations before income taxes	1,062,865	985,557	837,430	768,116	636,824
Income tax provision[3]	221,986	24,021	208,889	181,702	189,612
Income from continuing operations including noncontrolling interests	840,879	961,536	628,541	586,414	447,212
Income (loss) from discontinued operations, net of tax[4]	50,432	(4,474)	(31,654)	—	—
Net income including noncontrolling interests	891,311	957,062	596,887	586,414	447,212
Net income attributable to noncontrolling interests	(1,541)	—	—	—	—
Net income attributable to TD Group	$ 889,770	$ 957,062	$ 596,887	$ 586,414	$ 447,212
Net income applicable to TD Group common stock	$ 778,749	$ 900,914	$ 437,630	$ 583,414	$ 443,847
Denominator for basic and diluted earnings per share under the two-class method:					
Weighted-average common shares outstanding	53,091	52,345	52,517	53,326	53,112
Vested options deemed participating securities	3,174	3,252	3,013	2,831	3,494
Total shares for basic and diluted earnings per share	56,265	55,597	55,530	56,157	56,606
Net earnings per share:					
Net earnings per share from continuing operations—basic and diluted	$ 12.94	$ 16.28	$ 8.45	$ 10.39	$ 7.84
Net earnings (loss) per share from discontinued operations—basic and diluted	0.90	(0.08)	(0.57)	—	—
Net earnings per share[5]	$ 13.84	$ 16.20	$ 7.88	$ 10.39	$ 7.84
Cash dividends paid per common share	$ 30.00	$ —	$ 46.00	$ —	$ —

	As of September 30,				
	2019	2018	2017	2016	2015
	(in thousands)				
Balance Sheet Data:					
Cash and cash equivalents	$ 1,467,486	$ 2,073,017	$ 650,561	$ 1,586,994	$ 714,033
Working capital(6,7)	3,326,491	2,756,905	1,262,558	2,178,094	1,128,993
Total assets(6,7)	16,254,731	12,197,467	9,975,661	10,726,277	8,303,935
Total debt(7)	16,898,953	12,877,282	11,762,661	10,195,607	8,349,602
TD Group stockholders' deficit	(2,894,905)	(1,808,471)	(2,951,204)	(651,490)	(1,038,306)

(1) Gross profit and income from operations include the effect of charges relating to purchase accounting adjustments to inventory associated with the acquisition of various businesses and product lines for the fiscal years ended September 30, 2019, 2018, 2017, 2016 and 2015 of $76,927, $7,080, $20,621, $23,449, and $11,362, respectively.

(2) The prior period operating data has been adjusted as a result of 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 ("ASU 2017-07").

(3) On December 22, 2017, the Tax Cuts and Jobs Act (the “Act”) was enacted. The Act reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings from certain foreign subsidiaries that were previously deferred as well as other changes. Income tax expense as a percentage of income before income taxes was approximately 20.9% for the fiscal year ended September 30, 2019 compared to 2.4% for the fiscal year ended September 30, 2018.

(4) The fiscal 2019 results include the divestitures of Souriau-Sunbank (expected first quarter of fiscal 2020) and EIT (September 2019). The fiscal 2018 and 2017 results include the divestiture of Schroth (January 2018). Refer to Note 23, “Discontinued Operations,” to the consolidated financial statements for further information.

(5) Net earnings per share is calculated by dividing net income applicable to TD Group common stock by the basic and diluted weighted average common shares outstanding.

(6) In connection with adopting ASU 2015-17, “Balance Sheet Classification of Deferred Taxes,” for reporting periods ended after October 1, 2015, the Company reclassified $45,375 from current deferred income tax assets in our consolidated balance sheets as of September 2015, to non-current deferred income tax liabilities.

(7) In connection with adopting ASU 2015-03, “Simplifying the Presentation of Debt Issuance Costs,” for reporting periods ended after October 1, 2015, the Company reclassified $77,740 from debt issuance costs in our consolidated balance sheets as of September 2015, to the current portion of long-term and long-term-term debt.

Non-GAAP Financial Measures

We present below certain financial information based on our EBITDA and EBITDA As Defined. References to “EBITDA” mean earnings before interest, taxes, depreciation and amortization, and references to “EBITDA As Defined” mean EBITDA plus, as applicable for each relevant period, certain adjustments as set forth in the reconciliations of net income to EBITDA and EBITDA As Defined and the reconciliations of net cash provided by operating activities to EBITDA and EBITDA As Defined presented below.

Neither EBITDA nor EBITDA As Defined is a measurement of financial performance under accounting principles generally accepted in the United States of America (“GAAP”). We present EBITDA and EBITDA As Defined because we believe they are useful indicators for evaluating operating performance and liquidity.

Our management believes that EBITDA and EBITDA As Defined are useful as indicators of liquidity because securities analysts, investors, rating agencies and others use EBITDA to evaluate a company's ability to incur and service debt. In addition, EBITDA As Defined is useful to investors because the revolving commitments under our senior secured credit facility requires compliance under certain circumstances, on a pro forma basis, with a financial covenant that measures the ratio of the amount of our secured indebtedness to the amount of our Consolidated EBITDA defined in the same manner as we define EBITDA As Defined herein.

In addition to the above, our management uses EBITDA As Defined to review and assess the performance of the management team in connection with employee incentive programs and to prepare its annual budget and financial projections. Moreover, our management uses EBITDA As Defined to evaluate acquisitions.

Although we use EBITDA and EBITDA As Defined as measures to assess the performance of our business and for the other purposes set forth above, the use of these non-GAAP financial measures as analytical tools has limitations, and you should not consider any of them in isolation, or as a substitute for analysis of our results of operations as reported in accordance with GAAP. Some of these limitations are:

- neither EBITDA nor EBITDA As Defined reflects the significant interest expense, or the cash requirements, necessary to service interest payments on our indebtedness;
- although depreciation and amortization are non-cash charges, the assets being depreciated and amortized will often have to be replaced in the future, and neither EBITDA nor EBITDA As Defined reflects any cash requirements for such replacements;
- the omission of the substantial amortization expense associated with our intangible assets further limits the usefulness of EBITDA and EBITDA As Defined;
- neither EBITDA nor EBITDA As Defined includes the payment of taxes, which is a necessary element of our operations; and
- EBITDA As Defined excludes the cash expense we have incurred to integrate acquired businesses into our operations, which is a necessary element of certain of our acquisitions.

Because of these limitations, EBITDA and EBITDA As Defined should not be considered as measures of discretionary cash available to us to invest in the growth of our business. Management compensates for these limitations by not viewing EBITDA or EBITDA As Defined in isolation and specifically by using other GAAP measures, such as net income, net sales and operating profit, to measure our operating performance. Neither EBITDA nor EBITDA As Defined is a measurement of financial performance under GAAP, and neither should be considered as an alternative to net income or cash flow from operations determined in accordance with GAAP. Our calculation of EBITDA and EBITDA As Defined may not be comparable to the calculation of similarly titled measures reported by other companies.

	Fiscal Years Ended September 30,				
	2019	2018	2017	2016	2015
	(in thousands)				
Other Financial Data:					
Cash flows provided by (used in):					
Operating activities	$ 1,015,472	$ 1,022,173	$ 788,733	$ 683,298	$ 520,938
Investing activities	(3,888,980)	(683,577)	(287,003)	(1,443,046)	(1,679,149)
Financing activities	2,271,353	1,085,600	(1,443,682)	1,632,467	1,054,947
Depreciation and amortization	225,700	129,844	141,025	121,670	93,663
Capital expenditures	101,591	73,341	71,013	43,982	54,871
Ratio of earnings to fixed charges(1)	2.2x	2.5x	2.4x	2.6x	2.5x
Other Data:					
EBITDA(2)	$ 2,148,318	$ 1,778,409	$ 1,581,044	$ 1,373,636	$ 1,149,272
EBITDA As Defined(2)	$ 2,418,801	$ 1,876,558	$ 1,710,563	$ 1,495,196	$ 1,233,654

(1) For purposes of computing the ratio of earnings to fixed charges, earnings consist of earnings from continuing operations before income taxes plus fixed charges. Fixed charges consist of interest expense, amortization of debt issuance costs, original issue discount and premium and the portion (approximately 33%) of rental expense that management believes is representative of the interest component of rental expense.

(2) EBITDA represents earnings from continuing operations before interest, taxes, depreciation and amortization. EBITDA As Defined represents EBITDA plus, as applicable for each relevant period, certain adjustments as set forth in the reconciliation of net income to EBITDA and EBITDA As Defined and the reconciliation of net cash provided by operating activities to EBITDA and EBITDA As Defined presented below. See “Non-GAAP Financial Measures” for additional information and limitations regarding these non-GAAP financial measures.

The following table sets forth a reconciliation of net income to EBITDA and EBITDA As Defined:

	Fiscal Years Ended September 30,				
	2019	2018	2017	2016	2015
	(in thousands)				
Income from continuing operations	$ 840,879	$ 961,536	$ 628,541	$ 586,414	$ 447,212
Adjustments:					
Depreciation and amortization expense	225,700	129,844	141,025	121,670	93,663
Interest expense, net	859,753	663,008	602,589	483,850	418,785
Income tax provision	221,986	24,021	208,889	181,702	189,612
EBITDA	2,148,318	1,778,409	1,581,044	1,373,636	1,149,272
Adjustments:					
Inventory purchase accounting adjustments[(1)]	76,927	7,080	20,621	23,449	11,362
Acquisition integration costs[(2)]	61,443	17,484	6,341	18,539	12,554
Acquisition transaction-related expenses[(3)]	30,528	3,886	4,229	15,711	12,289
Stock compensation expense[(4)]	93,362	58,481	45,524	48,306	31,500
Refinancing costs[(5)]	3,013	6,396	39,807	15,794	18,393
Other, net[(6)]	5,210	4,822	12,997	(239)	(1,716)
EBITDA As Defined	$ 2,418,801	$ 1,876,558	$ 1,710,563	$ 1,495,196	$ 1,233,654

(1) Represents accounting adjustments to inventory associated with acquisitions of businesses and product lines that were charged to cost of sales when the inventory was sold.

(2) Represents costs incurred to integrate acquired businesses and product lines into TD Group’s operations, facility relocation costs and other acquisition-related costs.

(3) Represents transaction-related costs comprising deal fees; legal, financial and tax due diligence expenses; and valuation costs that are required to be expensed as incurred.

(4) Represents the compensation expense recognized by TD Group under our stock incentive plans.

(5) Represents costs expensed related to debt financing activities, including new issuances, extinguishments, refinancings and amendments to existing agreements.

(6) Primarily represents foreign currency transaction gains or losses, payroll withholding taxes on dividend equivalent payments and stock option exercises, non-service related pension costs, deferred compensation and gains or losses on the sale of fixed assets.

The following table sets forth a reconciliation of net cash provided by operating activities to EBITDA and EBITDA As Defined:

	Fiscal Years Ended September 30,				
	2019	2018	2017	2016	2015
	(in thousands)				
Net cash provided by operating activities	$ 1,015,472	$ 1,022,173	$ 788,733	$ 683,298	$ 520,938
Adjustments:					
Changes in assets and liabilities, net of effects from acquisitions of businesses	205,112	4,936	83,753	110,905	24,322
Interest expense, net[(1)]	831,719	640,880	581,483	467,639	402,988
Income tax provision—current[(2)]	209,212	175,661	215,385	175,894	188,952
Stock compensation expense[(3)]	(93,362)	(58,481)	(45,524)	(48,306)	(31,500)
Excess tax benefit from exercise of stock options[(2)]	—	—	—	—	61,965
Refinancing costs[(4)]	(3,013)	(6,396)	(39,807)	(15,794)	(18,393)
EBITDA from discontinued operations[(9)]	(16,822)	(364)	(2,979)	—	—
EBITDA	2,148,318	1,778,409	1,581,044	1,373,636	1,149,272
Adjustments:					
Inventory purchase accounting adjustments[(5)]	76,927	7,080	20,621	23,449	11,362
Acquisition integration costs[(6)]	61,443	17,484	6,341	18,539	12,554
Acquisition transaction-related expenses[(7)]	30,528	3,886	4,229	15,711	12,289
Stock compensation expense[(3)]	93,362	58,481	45,524	48,306	31,500
Refinancing costs[(4)]	3,013	6,396	39,807	15,794	18,393
Other, net[(8)]	5,210	4,822	12,997	(239)	(1,716)
EBITDA As Defined	$ 2,418,801	$ 1,876,558	$ 1,710,563	$ 1,495,196	$ 1,233,654

(1) Represents interest expense excluding the amortization of debt issuance costs, original issue discount and premium.

(2) Beginning with the fiscal year ended September 30, 2016, the income tax provision and excess tax benefit from exercise of stock options were impacted by the adoption of ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting."

(3) Represents the compensation expense recognized by TD Group under our stock incentive plans.

(4) Represents costs expensed related to debt financing activities, including new issuances, extinguishments, refinancings and amendments to existing agreements.

(5) Represents accounting adjustments to inventory associated with acquisitions of businesses and product lines that were charged to cost of sales when the inventory was sold.

(6) Represents costs incurred to integrate acquired businesses and product lines into TD Group's operations, facility relocation costs and other acquisition-related costs.

(7) Represents transaction-related costs comprising deal fees; legal, financial and tax due diligence expenses; and valuation costs that are required to be expensed as incurred.

(8) Primarily represents foreign currency transaction gains or losses, payroll withholding taxes on dividend equivalent payments and stock option exercises, non-service related pension costs, deferred compensation and gains or losses on the sale of fixed assets.

(9) The fiscal 2019 results include the divestitures of Souriau-Sunbank (expected first quarter of fiscal 2020) and EIT (September 2019). The fiscal 2018 and 2017 results include the divestiture of Schroth (January 2018). Refer to Note 23, "Discontinued Operations," to the consolidated financial statements for further information.

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

The following discussion of our financial condition and results of operations should be read together with "Selected Financial Data" and TD Group's consolidated financial statements and the related notes included elsewhere in this report. The following discussion may contain predictions, estimates and other forward-looking statements that involve a number of risks and uncertainties, including those discussed under the heading entitled "Risk Factors" included elsewhere in this report. These risks could cause our actual results to differ materially from any future performance suggested below.

Overview

For fiscal year 2019, we generated net sales of $5,223.2 million, gross profit of $2,809.3 million or 53.8% of sales, and net income of $889.8 million. We believe we have achieved steady, long-term growth in sales and improvements in operating performance since our formation in 1993 due to our competitive strengths and through execution of our value-driven operating strategy. More specifically, focusing our businesses on our value-driven operating strategy of obtaining profitable new business, carefully controlling the cost structure and pricing our highly engineered value-added products to fairly reflect the value we provide and the resources required to do so has historically resulted in improvements in gross profit and income from operations over the long term.

Our selective acquisition strategy has also contributed to the growth of our business. The integration of certain acquisitions into our existing businesses combined with implementing our proven operating strategy has historically resulted in improvements of the financial performance of the acquired business.

We believe our key competitive strengths include:

Large and Growing Installed Product Base with Aftermarket Revenue Stream. We provide components to a large and growing installed base of aircraft to which we supply aftermarket products. We estimate that our products are installed on over 100,000 commercial transport, regional transport, military and general aviation fixed wing turbine aircraft and rotary wing aircraft.

Diversified Revenue Base. We believe that our diversified revenue base reduces our dependence on any particular product, platform or market channel and has been a significant factor in maintaining our financial performance. Our products are installed on almost all of the major commercial aircraft platforms now in production. We expect to continue to develop new products for military and commercial applications.

Barriers to Entry. We believe that the niche nature of our markets, the industry's stringent regulatory and certification requirements, the large number of products that we sell and the investments necessary to develop and certify products create potential disincentives to competition for certain products.

Our business strategy is made up of two key elements: (1) a value-driven operating strategy focused around our three core value drivers and (2) a selective acquisition strategy.

Value-Driven Operating Strategy. Our three core value drivers are:

- *Obtaining Profitable New Business.* We attempt to obtain profitable new business by using our technical expertise and application skill and our detailed knowledge of our customer base and the individual niche markets in which we operate. We have regularly been successful in identifying and developing both aftermarket and OEM products to drive our growth.
- *Improving Our Cost Structure.* We are committed to maintaining and continuously improving our lean cost structure through detailed attention to the cost of each of the products that we offer and our organizational structure, with a focus on reducing the cost of each.
- *Providing Highly Engineered Value-Added Products to Customers.* We focus on the engineering, manufacturing and marketing of a broad range of highly engineered niche products that we believe provide value to our customers. We believe we have been consistently successful in communicating to our customers the value of our products. This has generally enabled us to price our products to fairly reflect the value we provide and the resources required to do so.

Selective Acquisition Strategy. We selectively pursue the acquisition of proprietary aerospace component businesses when we see an opportunity to create value through the application of our three core value-driven operating strategies. The aerospace industry, in particular, remains highly fragmented, with many of the companies in the industry being small private businesses or small non-core operations of larger businesses. We have significant experience among our management team in executing acquisitions and integrating acquired businesses into our company and culture. As of the date of this report, we have successfully acquired approximately 85 businesses and/or product lines since our formation in 1993. Many of these acquisitions have been integrated into an existing TransDigm production facility, which enables a higher production capacity utilization, which in turn improves gross profit levels due to the ability to spread the fixed manufacturing overhead costs over higher production volume. In fiscal 2019, we completed our largest acquisition to date when we acquired Esterline. Esterline, through its subsidiaries, is an industry leader in specialized manufacturing for the aerospace and defense industry, including significant aftermarket exposure, primarily within three core disciplines: advanced materials, avionics and controls and sensors and systems.

Acquisitions and divestitures during the most recent three fiscal years are more fully described in Note 2, “Acquisitions and Divestitures,” in the notes to the consolidated financial statements included herein.

Critical Accounting Policies

Our consolidated financial statements have been prepared in conformity with GAAP, which often requires the judgment of management in the selection and application of certain accounting principles and methods. Management believes that the quality and reasonableness of our most critical policies enable the fair presentation of our financial position and results of operations. However, investors are cautioned that the sensitivity of financial statements to these methods, assumptions and estimates could create materially different results under different conditions or using different assumptions.

Below are those policies applied in preparing our financial statements that management believes are the most dependent on the application of estimates and assumptions. For additional accounting policies, see Note 3, “Summary of Significant Accounting Policies,” in the notes to the consolidated financial statements included herein.

Revenue Recognition**:** In May 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2014-09, which created a new topic in the Accounting Standards Codification (“ASC”) 606, “Revenue from Contracts with Customers.” In addition to superseding and replacing nearly all existing U.S. GAAP revenue recognition guidance, including industry-specific guidance, ASC 606 requires an entity to recognize revenue in a manner that depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The standard also specifies the accounting of some costs to obtain or fulfill a contract with a customer and expands the disclosure requirements around contracts with customers. The Company adopted this standard in the first quarter of fiscal 2019 using the modified retrospective method. The adoption of this standard did not have a material impact on our consolidated results of operations, financial position or cash flows. The results for periods before fiscal 2019 were not restated for the new standard and the cumulative effect of the change in accounting was recognized through retained earnings at the date of adoption. Refer to Note 5, "Revenue Recognition," for additional disclosures relating to ASC 606.

Revenue is recognized from the sale of products when control transfers to the customer, which is demonstrated by our right to payment, a transfer of title, a transfer of the risk and rewards of ownership, or the customer acceptance, but most frequently upon shipment where the customer obtains physical possession of the goods. The majority of the Company's revenue is recorded at a point in time. Sales recognized over time are generally accounted for using an input measure to determine progress completed at the end of the period. Sales for service contracts generally are recognized as the services are provided. For agreements with multiple performance obligations, judgment is required to determine whether performance obligations specified in these agreements are distinct and should be accounted for as separate revenue transactions for recognition purposes.

Inventories**:** Inventories are stated at the lower of cost or net realizable value. Cost of inventories is generally determined by the average cost and the first-in, first-out (FIFO) methods and includes material, labor and overhead related to the manufacturing process. Because the Company sells products that are installed on airframes that can be in-service for 25 or more years, it must keep a supply of such products on hand while the airframes are in use. Where management estimated that the net realizable value was below cost or determined that future demand was lower than current inventory levels, based on historical experience, current and projected market demand, current and projected volume trends and other relevant current and projected factors associated with the current economic conditions, a reduction in inventory cost to estimated net realizable value was made by recording a provision included in cost of sales. Although management believes that the Company’s estimates of excess and obsolete inventory are reasonable, actual results may differ materially from the estimates and additional provisions may be required in the future. In addition, in accordance with industry practice, all inventories are classified as current assets as all inventories are available and necessary to support current sales, even though a portion of the inventories may not be sold within one year. Historically, changes in estimates in the net realizable value of inventories have not been significant.

Goodwill and Other Intangible Assets**:** In accordance with ASC 805, “Business Combinations,” the Company uses the acquisition method of accounting to allocate costs of acquired businesses to the assets acquired and liabilities assumed based on their estimated fair values at the dates of acquisition. The excess costs of acquired businesses over the fair values of the assets acquired and liabilities assumed were recognized as goodwill. The valuations of the acquired assets and liabilities will impact the determination of future operating results. Determining the fair value of assets acquired and liabilities assumed requires management’s judgment and often involves the use of significant estimates and assumptions, including assumptions with respect to future cash inflows and outflows, revenue growth rates, discount rates, customer attrition rates, royalty rates, asset lives and market multiples, among other items. We determine the fair values of intangible assets acquired generally in consultation with third-party valuation advisors. Fair value adjustments to the Company’s assets and liabilities are recognized and the results of operations of the acquired business are included in our consolidated financial statements from the effective date of the merger or acquisition.

Intangible assets other than goodwill are recognized if the benefit of the intangible asset is obtained through contractual or other legal rights, or if the intangible asset can be sold, transferred, licensed or exchanged, regardless of the Company’s intent to do so. Goodwill and identifiable intangible assets are recorded at their estimated fair value on the date of acquisition and are reviewed at least annually for impairment based on cash flow projections and fair value estimates.

GAAP requires that the annual, and any interim, impairment assessment be performed at the reporting unit level. The reporting unit level is one level below an operating segment. Substantially all goodwill was determined and recognized for each reporting unit pursuant to the accounting for the merger or acquisition as of the date of each transaction. With respect to acquisitions integrated into an existing reporting unit, any acquired goodwill is combined with the goodwill of the reporting unit.

At the time of goodwill impairment testing, the Company first assesses qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, and whether it is necessary to perform the quantitative goodwill impairment test. The quantitative test is required only if the Company concludes that it is more likely than not that a reporting unit’s fair value is less than its carrying amount, or if the Company elects not to perform a qualitative assessment of a reporting unit. For the quantitative test, management determines the estimated fair value through the use of a discounted cash flow valuation model incorporating discount rates commensurate with the risks involved for each reporting unit. If the calculated estimated fair value is less than the current carrying value, impairment of goodwill of the reporting unit may exist. The use of a discounted cash flow valuation model to determine estimated fair value is common practice in impairment testing. The key assumptions used in the discounted cash flow valuation model for impairment testing includes discount rates, growth rates, cash flow projections and terminal value rates. Discount rates are set by using the Weighted Average Cost of Capital (“WACC”) methodology. The WACC methodology considers market and industry data as well as company specific risk factors for each reporting unit in determining the appropriate discount rates to be used. The discount rate utilized for each reporting unit is indicative of the return an investor would expect to receive for investing in such a business.

Management, considering industry and company-specific historical and projected data, develops growth rates, sales projections and cash flow projections for each reporting unit. Terminal value rate determination follows common methodology of capturing the present value of perpetual cash flow estimates beyond the last projected period assuming a constant WACC and low long-term growth rates. As an indicator that each reporting unit has been valued appropriately through the use of the discounted cash flow valuation model, the aggregate of all reporting unit’s estimated fair value is reconciled to the total market capitalization of the Company.

The Company had 54 reporting units with goodwill as of the first day of the fourth quarter of fiscal 2019, the date of the last annual impairment test. The estimated fair values of each of the reporting units was substantially in excess of their respective carrying values, and therefore, no goodwill impairment was recorded. The Company performed a sensitivity analysis on the discount rate, which is a significant assumption in the calculation of fair values. With a one percentage point increase in the discount rate, all of the reporting units would continue to have fair values in excess of their respective carrying values.

Management tests indefinite-lived intangible assets for impairment at the asset level, as determined by appropriate asset valuation at the time of acquisition. The impairment test for indefinite-lived intangible assets consists of a comparison between the estimated fair values and carrying values. If the carrying amounts of intangible assets that have indefinite useful lives exceed their estimated fair values, an impairment loss will be recognized in an amount equal to the difference. Management utilizes the royalty savings valuation method to determine the estimated fair value for each indefinite-lived intangible asset. In this method, management estimates the royalty savings arising from the ownership of the intangible asset. The key assumptions used in estimating the royalty savings for impairment testing include discount rates, royalty rates, growth rates, sales projections and terminal value rates. Discount rates used are similar to the rates developed by the WACC methodology considering any differences in company-specific risk factors between reporting units and the indefinite-lived intangible assets. Royalty rates are established by management with the advice of valuation experts and periodically substantiated by valuation experts. Management, considering industry and company-specific historical and projected data, develops growth rates and sales projections for each significant intangible asset. Terminal value rate determination follows common methodology of capturing the present value of perpetual sales estimates beyond the last projected period assuming a constant WACC and low long-term growth rates.

The discounted cash flow and royalty savings valuation methodologies require management to make certain assumptions based upon information available at the time the valuations are performed. Actual results could differ from these assumptions. Management believes the assumptions used are reflective of what a market participant would have used in calculating fair value considering the current economic conditions.

***Stock-Based Compensation*:** The cost of the Company’s stock-based compensation is recorded in accordance with ASC 718, “Stock Compensation.” The Company uses a Black-Scholes pricing model to estimate the grant-date fair value of the stock options awarded. The Black-Scholes pricing model requires assumptions regarding the expected volatility of the Company’s common shares, the risk-free interest rate, the expected life of the stock options award and the Company’s dividend yield. The Company utilizes historical data in determining these assumptions. An increase or decrease in the assumptions or economic events outside of management’s control could have an impact on the Black-Scholes pricing model.

***Income Taxes*:** The Company estimates income taxes in each jurisdiction in which it operates. This involves estimating taxable earnings, specific taxable and deductible items, the likelihood of generating sufficient future taxable income to utilize deferred tax assets and possible exposures related to future tax audits. To the extent these estimates change, adjustments to deferred and accrued income taxes are made in the period in which the changes occur. Historically, such adjustments have not been significant.

Results of Operations

The following table sets forth, for the periods indicated, certain operating data of the Company, including presentation of the amounts as a percentage of net sales (amounts in thousands):

	Fiscal Years Ended September 30,					
	2019	2019 % of Sales	2018	2018 % of Sales	2017	2017 % of Sales
Net sales	$ 5,223,203	100.0 %	$ 3,811,126	100.0 %	$ 3,504,286	100.0 %
Cost of sales	2,413,932	46.2 %	1,633,616	42.9 %	1,519,659	43.4 %
Selling and administrative expenses	747,773	14.3 %	449,676	11.8 %	412,555	11.8 %
Amortization of intangible assets	134,952	2.6 %	72,454	1.9 %	89,226	2.5 %
Income from operations	1,926,546	36.9 %	1,655,380	43.4 %	1,482,846	42.3 %
Interest expense—net	859,753	16.5 %	663,008	17.4 %	602,589	17.2 %
Refinancing costs	3,013	0.1 %	6,396	0.2 %	39,807	1.1 %
Other expense	915	— %	419	— %	3,020	0.1 %
Income tax provision	221,986	4.2 %	24,021	0.6 %	208,889	6.0 %
Income from continuing operations including noncontrolling interests	840,879	16.1 %	961,536	25.2 %	628,541	17.9 %
Income (loss) from discontinued operations, net of tax	50,432	1.0 %	(4,474)	(0.1)%	(31,654)	(0.9)%
Net income including noncontrolling interests	891,311	17.1 %	957,062	25.1 %	596,887	17.0 %
Net income attributable to noncontrolling interests	(1,541)	— %	—	— %	—	— %
Net income attributable to TD Group	$ 889,770	17.0 %	$ 957,062	25.1 %	$ 596,887	17.0 %

Fiscal year ended September 30, 2019 compared with fiscal year ended September 30, 2018

<u>Total Company</u>

- ***Net Sales*.** Net organic sales and acquisition sales and the related dollar and percentage changes for the fiscal years ended September 30, 2019 and 2018 were as follows (amounts in millions):

	Fiscal Years Ended			
	September 30, 2019	September 30, 2018	Change	% Change Total Sales
Organic sales	$ 4,212.7	$ 3,811.1	$ 401.6	10.5%
Acquisition sales	1,010.5	—	1,010.5	26.5%
	$ 5,223.2	$ 3,811.1	$ 1,412.1	37.0%

The increase in organic sales for the fiscal year ended September 30, 2019 compared with fiscal year ended September 30, 2018, is primarily related to an increase in defense sales ($180.8 million, an increase of 13.6%), commercial OEM sales ($115.1 million, an increase of 11.9%) and commercial aftermarket sales ($105.5 million, an increase of 7.9%).

Acquisition sales represent sales of acquired businesses for the period up to one year subsequent to their respective acquisition dates. The amount of acquisition sales displayed in the table above for the fiscal year ended September 30, 2019 are attributable to the acquisitions of Esterline (March 2019), Skandia (July 2018), Extant (April 2018) and Kirkhill (March 2018).

- ***Cost of Sales and Gross Profit.*** Cost of sales increased by $780.3 million, or 47.8%, to $2,413.9 million for the fiscal year ended September 30, 2019 compared to $1,633.6 million for the fiscal year ended September 30, 2018. Cost of sales and the related percentage of total sales for the fiscal years ended September 30, 2019 and 2018 were as follows (amounts in millions):

	Fiscal Years Ended			
	September 30, 2019	September 30, 2018	Change	% Change
Cost of sales—excluding costs below	$ 2,319.4	$ 1,607.2	$ 712.2	44.3 %
% of total sales	44.4 %	42.2 %		
Inventory acquisition accounting adjustments	76.9	7.1	69.8	983.1 %
% of total sales	1.5 %	0.2 %		
Stock compensation expense	9.3	5.9	3.4	57.6 %
% of total sales	0.2 %	0.2 %		
Acquisition integration costs	13.1	13.8	(0.7)	(5.1)%
% of total sales	0.3 %	0.4 %		
Foreign currency gain	(4.8)	(0.4)	(4.4)	(1,100.0)%
% of total sales	(0.1)%	— %		
Total cost of sales	$ 2,413.9	$ 1,633.6	$ 780.3	47.8 %
% of total sales	46.2 %	42.9 %		
Gross profit	$ 2,809.3	$ 2,177.5	$ 631.8	29.0 %
Gross profit percentage	53.8 %	57.1 %		

The net increase in the dollar amount of cost of sales during the fiscal year ended September 30, 2019 was primarily due to increased sales volume, both organic and from recent acquisitions, an increase in inventory acquisition accounting adjustments resulting from the Esterline acquisition, and an increase in stock compensation expense. The increases were partially offset by a decrease in acquisition integration costs and higher foreign currency gains as presented in the table above.

Gross profit as a percentage of sales decreased by 3.3 percentage points to 53.8% for the fiscal year ended September 30, 2019 from 57.1% for the fiscal year ended September 30, 2018. The dollar amount of gross profit increased by $631.8 million, or 29.0%, for the fiscal year ended September 30, 2019 compared to the fiscal year ended September 30, 2018 due to the following items:

- Gross profit on the sales from the acquisitions (excluding acquisition-related costs) was approximately $416.1 million for the fiscal year ended September 30, 2019, which represented gross profit of approximately 41% of the acquisition sales.
- Organic sales growth described above, application of our three core value-driven operating strategies and positive leverage on our fixed overhead costs spread over a higher production volume resulted in an increase in gross profit of approximately $283.8 million for the fiscal year ended September 30, 2019.
- Offsetting increases in gross profit by $68.1 million compared to the prior fiscal year was attributable to increased inventory acquisition accounting adjustments, increased stock compensation expense, partially offset by a decrease in acquisition integration costs and higher foreign currency gains.
- ***Selling and Administrative Expenses.*** Selling and administrative expenses increased by $298.6 million to $748.7 million, or 14.3% of sales, for the fiscal year ended September 30, 2019 from $450.1 million, or 11.8% of sales, for the comparable period last year. Selling and administrative expenses and the related percentage of total sales for the fiscal years ended September 30, 2019 and 2018 were as follows (amounts in millions):

	Fiscal Years Ended			
	September 30, 2019	September 30, 2018	Change	% Change
Selling and administrative expenses—excluding costs below	$ 585.9	$ 389.9	$ 196.0	50.3%
% of total sales	11.2%	10.2%		
Acquisition-related expenses	78.8	7.6	71.2	936.8%
% of total sales	1.5%	0.2%		
Stock compensation expense	84.0	52.6	31.4	59.7%
% of total sales	1.6%	1.4%		
Total selling and administrative expenses	$ 748.7	$ 450.1	$ 298.6	66.3%
% of total sales	14.3%	11.8%		

The increase in the dollar amount of selling and administrative expenses during the fiscal year ended September 30, 2019 is primarily due to higher acquisition-related expenses of $71.2 million, higher stock compensation expense of $31.4 million and higher selling and administrative expenses resulting from primarily the acquisition of Esterline in March 2019. Also contributing to the increase in selling and administrative expenses was a $16.1 million payment of a voluntary refund to several U.S. Department of Defense agencies that occurred in the third quarter of fiscal 2019.

- ***Amortization of Intangible Assets.*** Amortization of intangible assets was $135.0 million for the fiscal year ended September 30, 2019 compared to $72.5 million for the fiscal year ended September 30, 2018. The increase in amortization expense of $62.5 million was primarily due to the amortization expense on the definite-lived intangible assets recorded in connection with the fiscal 2019 acquisition of Esterline.

- ***Refinancing Costs.*** Refinancing costs of $3.0 million were recorded for the fiscal year ended September 30, 2019 and primarily related to the debt financing activities that occurred in the second quarter of fiscal 2019. Refinancing costs of $6.4 million were recorded for the fiscal year ended September 30, 2018 representing debt issuance costs expensed in connection with the fiscal 2018 debt financing activity.

- ***Interest Expense-net.*** Interest expense-net includes interest on borrowings outstanding, amortization of debt issuance costs, original issue discount and premium and revolving credit facility fees slightly offset by interest income. Interest expense-net increased $196.8 million, or 29.7%, to $859.8 million for the fiscal year ended September 30, 2019 from $663.0 million for the comparable period last year. The net increase in interest expense-net was primarily due to an increase in the weighted average level of outstanding borrowings, which was approximately $15.5 billion for the fiscal year ended September 30, 2019 compared to approximately $12.6 billion for the fiscal year ended September 30, 2018. The increase in weighted average level of borrowings was primarily due to the activity in the second quarter of fiscal 2019 consisting of the issuance of $4.0 billion in 2026 Secured Notes and $550 million in 2027 Notes and the activity in the third quarter of fiscal 2018 consisting of issuing additional term loans of $700 million (gross) and issuing $500 million in 6.875% 2026 Notes. The increases in new debt described above were partially offset by principal payments on the term loans over the comparable period and redemption of the 2020 Notes. The weighted average interest rate for cash interest payments on total borrowings outstanding at September 30, 2019 was 5.6%.

- ***Income Taxes.*** Income tax expense as a percentage of income before income taxes was approximately 20.9% for the fiscal year ended September 30, 2019 compared to 2.4% for the fiscal year ended September 30, 2018. The Company's higher effective tax rate for the fiscal year ended September 30, 2019 was primarily due benefits recognized in the fiscal year ended September 30, 2018 related to the enactment of the Tax Cuts and Jobs Act along with additional taxes recognized in the fiscal year ended September 30, 2019 as described in Note 14, "Income Taxes."

- ***Income (Loss) from Discontinued Operations*****.** On July 21, 2019, the Company entered into a binding offer for the acquisition by Eaton Corporation plc of the shares of Souriau-Sunbank for approximately $920 million. The parties are expected to complete the transaction during the first quarter of fiscal 2020. Therefore, Souriau-Sunbank is classified as held-for-sale as of September 30, 2019. The results of operations of Souriau-Sunbank are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented since the date acquired. On September 20, 2019, the Company completed the divestiture of its EIT group of businesses to an affiliate of KPS Capital Partners, LP for approximately $190 million. The income from discontinued operations was $50.4 million for the fiscal year ended September 30, 2019, which includes the operating results for Souriau-Sunbank and EIT. On January 26, 2018, the Company completed the sale of Schroth in a management buy out to a private equity fund and certain members of Schroth management for approximately $61.4 million which included a working capital adjustment of $0.3 million paid in July 2018. The loss from discontinued operations was $(4.5) million for the fiscal year ended September 30, 2018.

- ***Net Income Attributable to TD Group*****.** Net income attributable to TD Group decreased $67.3 million, or 7.0%, to $889.8 million for the fiscal year ended September 30, 2019 compared to net income attributable to TD Group of $957.1 million for the fiscal year ended September 30, 2018, primarily as a result of the factors referred to above.

- ***Earnings per Share*****.** Basic and diluted earnings per share from continuing operations and discontinued operations were $12.94 and $0.90, respectively for the fiscal year ended September 30, 2019. For the fiscal year ended September 30, 2018, basic and diluted earnings (loss) per share from continuing operations and discontinued operations were $16.28 and $(0.08), respectively. Net income attributable to TD Group for the fiscal year ended September 30, 2019 of $889.8 million was decreased by dividend equivalent payments of $111.0 million, or $1.97 per share, resulting in net income available to common shareholders of $778.7 million, or $13.84 per share. Net income attributable to TD Group for the fiscal year ended September 30, 2018 of $957.1 million was decreased by dividend equivalent payments of $56.1 million, or $1.01 per share, resulting in net income available to common shareholders of $900.9 million, or $16.20 per share. The decrease of $2.36 per share is a result of the factors referred to above.

Business Segments

- ***Segment Net Sales.*** Net sales by segment for the fiscal years ended September 30, 2019 and 2018 were as follows (amounts in millions):

	Fiscal Years Ended September 30,					
	2019	% of Sales	2018	% of Sales	Change	% Change
Power & Control	$ 2,735.6	52.4%	$ 2,139.1	56.1%	$ 596.5	27.9%
Airframe	2,329.4	44.6%	1,530.9	40.2%	798.5	52.2%
Non-aviation	158.2	3.0%	141.0	3.7%	17.2	12.2%
	$ 5,223.2	100.0%	$ 3,811.0	100.0%	$ 1,412.2	37.1%

Acquisition sales for the Power & Control segment totaled $359.3 million, or an increase of 16.8%, resulting from the acquisitions of Esterline and Extant. Organic sales for the Power & Control segment increased $237.2 million, an increase of 11.1%, for the fiscal year ended September 30, 2019 compared to the fiscal year ended September 30, 2018. The organic sales increase resulted primarily from an increase in defense sales ($128.0 million, an increase of 12.8%), an increase in commercial aftermarket sales ($59.3 million, an increase of 9.4%) and an increase in commercial OEM sales ($52.4 million, an increase of 11.5%).

Acquisition sales for the Airframe segment totaled $639.2 million, or an increase of 41.7%, resulting from the acquisitions of Esterline, Kirkhill and Skandia. Organic sales for the Airframe segment increased $159.3 million, an increase of 10.4%, for the fiscal year ended September 30, 2019 compared to the fiscal year ended September 30, 2018. The organic sales increase resulted primarily from an increase in commercial OEM sales ($61.9 million, an increase of 12.5%), an increase in defense sales ($52.4 million, an increase of 16.3%) and an increase in commercial aftermarket sales ($46.2 million, an increase of 6.6%).

Acquisition sales for the Non-aviation segment totaled $12.0 million, or an increase of 8.5%, resulting from the acquisition of Esterline. Organic sales for the Non-aviation segment increased by $5.2 million, an increase of 3.6%, for the fiscal year ended September 30, 2019 compared to the fiscal year ended September 30, 2018.

- ***EBITDA As Defined.*** EBITDA As Defined by segment for the fiscal years ended September 30, 2019 and 2018 were as follows (amounts in millions):

	Fiscal Years Ended September 30,					
	2019	% of Segment Sales	2018	% of Segment Sales	Change	% Change
Power & Control	$ 1,395.1	51.0%	$ 1,114.4	52.1%	$ 280.7	25.2%
Airframe	1,062.7	45.6%	759.3	49.6%	303.4	40.0%
Non-aviation	50.6	32.0%	44.3	31.4%	6.3	14.2%
	$ 2,508.4	48.0%	$ 1,918.0	50.3%	$ 590.4	30.8%

EBITDA As Defined for the Power & Control segment from the acquisitions of Esterline and Extant was approximately $107.5 million for the fiscal year ended September 30, 2019. Organic EBITDA As Defined for the Power & Control segment increased approximately $173.2 million, an increase of 15.5%, resulting from organic sales growth in defense, commercial aftermarket and commercial OEM, along with the application of our three core value-driven operating strategies and positive leverage on our fixed overhead costs spread over a higher production volume.

EBITDA As Defined for the Airframe segment from the acquisitions of Esterline, Kirkhill and Skandia was approximately $191.5 million for the fiscal year ended September 30, 2019. Organic EBITDA As Defined for the Airframe segment increased approximately $111.9 million, an increase of 14.7%, resulting from organic sales growth in commercial OEM, defense and commercial aftermarket, along with the application of our three core value-driven operating strategies and positive leverage on our fixed overhead costs spread over a higher production volume.

EBITDA As Defined for the Non-aviation segment from the acquisition of Esterline was approximately $1.2 million for the fiscal year ended September 30, 2019. Organic EBITDA As Defined for the Non-aviation segment increased approximately $5.1 million, an increase of 11.5%.

Fiscal year ended September 30, 2018 compared with fiscal year ended September 30, 2017

For our results of operations for fiscal 2018 compared with fiscal 2017, refer to the discussion in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of Form 10-K for the fiscal year ended September 30, 2018, as filed with the Securities and Exchange Commission on November 9, 2018.

Backlog

For information about our backlog, see Item 1. “Business.”

Foreign Operations

Our direct sales to foreign customers were approximately $1,778.4 million, $1,355.1 million, and $1,318.9 million for the fiscal years 2019, 2018 and 2017, respectively. Sales to foreign customers are subject to numerous additional risks, including foreign currency fluctuations, the impact of foreign government regulations, political uncertainties and differences in business practices. There can be no assurance that foreign governments will not adopt regulations or take other action that would have a direct or indirect adverse impact on the business or market opportunities of the Company within such governments’ countries. Furthermore, there can be no assurance that the political, cultural and economic climate outside the United States will be favorable to our operations and growth strategy.

Inflation

Many of the Company’s raw materials and operating expenses are sensitive to the effects of inflation, which could result in changing operating costs. Furthermore, recently implemented changes to U.S. and other countries’ tariff and import/export regulations may have an unfavorable impact on raw materials pricing. The effects of inflation on the Company’s businesses during the fiscal years 2019, 2018 and 2017 were immaterial.

Liquidity and Capital Resources

We have historically maintained a capital structure comprising a mix of equity and debt financing. We vary our leverage both to optimize our equity return and to pursue acquisitions. We expect to meet our current debt obligations as they come due through internally generated funds from current levels of operations and/or through refinancing in the debt markets prior to the maturity dates of our debt.

We continually evaluate our debt facilities to assess whether they most efficiently and effectively meet the current and future needs of our business. The Company evaluates from time to time the appropriateness of its current leverage, taking into consideration the Company’s debt holders, equity holders, credit ratings, acquisition opportunities and other factors. The Company’s debt leverage ratio, which is computed as total debt divided by EBITDA As Defined for the applicable twelve-month period, has varied widely during the Company’s history, ranging from approximately 3.5 to 7.2. Our debt leverage ratio at September 30, 2019 was approximately 7.0.

If the Company has excess cash, it generally prioritizes allocating the excess cash in the following manner: (1) capital spending at existing businesses, (2) acquisitions of businesses, (3) payment of a special dividend and/or repurchases of our common stock and (4) prepayment of indebtedness or repurchase of debt. Whether the Company undertakes common stock repurchases or other aforementioned activities will depend on prevailing market conditions, the Company's liquidity requirements, contractual restrictions and other factors. The amounts involved may be material. In addition, the Company may issue additional debt if prevailing market conditions are favorable to doing so.

The Company’s ability to make scheduled interest payments on, or to refinance, the Company’s indebtedness, or to fund non-acquisition related capital expenditures and research and development efforts, will depend on the Company’s ability to generate cash in the future. This is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond its control.

As a result of the debt financing transactions completed during the fiscal year ended September 30, 2019 as described in Note 12, “Debt,” to the consolidated financial statements, and completed in the first quarter of fiscal 2020 as described in the paragraphs below and in Note 26, "Subsequent Events," to the consolidated financial statements, interest payments will increase going forward in accordance with the terms of the related debt agreements. However, in connection with the continued application of our three core value-driven operating strategies (obtaining profitable new business, continually improving our cost structure and providing highly engineered value-added products to customers), we expect our efforts will continue to generate strong margins and provide more than sufficient cash provided by operating activities to meet our interest obligations and liquidity needs. We believe our cash provided by operating activities and available borrowing capacity will enable us to make strategic business combinations, pay dividends to our shareholders and/or make opportunistic investments in our own stock.

On October 29, 2019, the Company entered into a purchase agreement in connection with a private offering of $2.65 billion aggregate principal amount in 5.50% senior subordinated notes due November 15, 2027. The settlement of the debt financing transaction occurred on November 13, 2019. The notes were issued at a price of 100% of their principal amount. The Company will use a portion of the net proceeds from the offering of the notes to redeem all of its outstanding (aggregate principal amount of $1.15 billion) 6.000% senior subordinated notes due 2022. The remaining net proceeds will be used for general corporate purposes, which may include potential future acquisitions, dividends or repurchases under its stock repurchase program.

Two recent divestitures of businesses within the Non-aviation segment are expected to provide approximately $1.1 billion in gross cash proceeds to TransDigm. On September 20, 2019, TransDigm completed the divestiture of its Esterline Interface Technology (“EIT”) group of businesses to an affiliate of KPS Capital Partners, LP for approximately $190 million. EIT was acquired by TransDigm as part of its approximately $4.0 billion acquisition of Esterline in March 2019. In the first quarter of fiscal 2020, TransDigm is expected to complete the sale of the shares of the Souriau-Sunbank Companies (“Souriau-Sunbank”) to Eaton Corporation plc for approximately $920 million. Souriau-Sunbank was also acquired by TransDigm as part of its acquisition of Esterline.

On August 23, 2019, the Company paid a special cash dividend of $30.00 on each outstanding share of common stock and cash dividend equivalent payments on options granted under its stock incentive plans. The total cash payments related to the special dividend and dividend equivalent payments in fiscal 2019 were approximately $1.7 billion.

We do not anticipate declaring regular quarterly or annual cash dividends on our common stock in the near future. Any declaration of special cash dividends on our common stock in the future will be at the discretion of our Board of Directors and will depend upon our results of operations, earnings, capital requirements, financial condition, future prospects, contractual restrictions under the senior secured credit facility and Indentures, the availability of surplus under Delaware law and other factors deemed relevant by our Board of Directors. TD Group is a holding company and conducts all of its operations through direct and indirect subsidiaries. Unless TD Group receives dividends, distributions, advances, transfers of funds or other payments from our subsidiaries, TD Group will be unable to pay any dividends on our common stock in the future. The ability of any subsidiaries to take any of the foregoing actions is limited by the terms of our senior secured credit facility and Indentures and may be limited by future debt or other agreements that we may enter into.

In the future, the Company may increase its borrowings in connection with acquisitions, if cash flow from operating activities becomes insufficient to fund current operations or for other short-term cash needs or for stock repurchases or dividends. Our future leverage will also be impacted by the then current conditions of the credit markets.

Operating Activities. The Company generated $1,015.5 million of net cash from operating activities during fiscal 2019 compared to $1,022.2 million during fiscal 2018.

The change in trade accounts receivable during fiscal 2019 was a use of $82.3 million in cash compared to a use of cash of $43.8 million in fiscal 2018. The increase in the use of cash of $38.5 million is primarily attributable to an increase in sales and related timing of receipt of payment from customers.

The change in inventories during fiscal 2019 was a use of cash of $35.7 million compared to a use of cash of $17.9 million in fiscal 2018. The increase in the use of cash of $17.8 million compared to prior year relates to the building up of inventories at certain reporting units during the fourth fiscal quarter of 2019 based on existing backlog for the first quarter of fiscal 2020.

The change in accounts payable during fiscal 2019 was a use of cash of $1.6 million compared to a source of cash of $18.1 million in fiscal 2018 with the increase in the use of cash due to the timing of payments made to certain suppliers.

The Company generated $1,022.2 million of net cash from operating activities during fiscal 2018 compared to $788.7 million during fiscal 2017. The net increase of $233.5 million is primarily attributable to an increase in income from continuing operations of $156.6 million (excludes the non-cash effects of the adjustments resulting from the Tax Cuts and Jobs Act of $176.4 million). Changes in inventories, accounts payable and trade accounts receivable improved by approximately $23.4 million compared to the prior year.

Investing Activities. Net cash used in investing activities was $3,889.0 million during fiscal 2019, primarily consisting of capital expenditures of $101.6 million and payments for acquisitions, net of cash acquired, of $3,976.2 million which is primarily comprised of the acquisitions of Esterline for $3,923.9 million and NavCom for $27.0 million partially offset by the net cash proceeds received from the sale of EIT of $188.8 million. The Company estimates its capital expenditures in fiscal year 2020 to be between $160 million and $190 million with the increase from previous years attributable to the Esterline businesses being under TransDigm ownership for the entire fiscal year period. The Company’s capital expenditures incurred from year to year are primarily for projects that are consistent with our three core value-driven operating strategies (obtaining profitable new business, continually improve our cost structure and providing highly engineered value-added products to customers). In the first quarter of fiscal 2020, we expect to complete the sale of Souriau-Sunbank and receive approximately $920 million in gross cash proceeds from the sale.

Net cash used in investing activities was $683.6 million during fiscal 2018, primarily consisting of cash paid in connection with the acquisitions of Kirkhill, Extant, and Skandia of $667.6 million and capital expenditures of $73.3 million slightly offset by the net cash proceeds received from the sale of Schroth of $57.4 million.

Net cash used in investing activities was $287.0 million during fiscal 2017, primarily consisting of cash paid for the Third Quarter 2017 Acquisitions of $106.3 million, the cash settlement of the Breeze-Eastern dissenting shares litigation of $28.7 million, the acquisition of Schroth of $79.7 million and capital expenditures of $71.0 million.

Financing Activities. Net cash provided by financing activities during the fiscal year ended September 30, 2019 was $2,271.4 million. The source of cash was primarily attributable to $4,479.8 million in net proceeds from the completion of the 2026 Secured Notes and 2027 Notes offerings in the second quarter of fiscal 2019 and $81.9 million in proceeds from stock option exercises. Sources were partially offset by the cash tender and redemption of the 2020 Notes for $550.0 million, repayment on term loans of $76.4 million, and the payment of $1,712.2 million in special dividend and dividend equivalent payments in fiscal 2019. In the first quarter of fiscal 2020, the Company received gross cash proceeds of approximately $2.65 billion from the completion of the 5.50% senior subordinated Notes offering. The Company will use a portion of the proceeds from the offering of the notes to redeem all of its outstanding (aggregate principal amount of $1.15 billion) 6.000% senior subordinated notes due 2022. The remaining net proceeds will be used for general corporate purposes, which may include potential future acquisitions, dividends or repurchases under its stock repurchase program.

Net cash provided by financing activities during the fiscal year ended September 30, 2018 was $1,085.6 million. The source of cash was primarily due to the net proceeds of $678.6 million from the fiscal 2018 term loans activity and net proceeds of $489.6 million from the issuance of the 6.875% 2026 Notes in the third quarter of fiscal 2018, along with $57.8 million in proceeds from stock option exercises. Partially offsetting these sources of cash were $56.1 million in dividend equivalent payments made in the first quarter of fiscal 2018.

Net cash used in financing activities during the fiscal year ended September 30, 2017 was $1,443.7 million. The use of cash was primarily related to the aggregate payment of $2,581.6 million for a $24.00 per share special dividend declared and paid during the first quarter of fiscal 2017 and a $22.00 per share special dividend declared and paid in the fourth quarter of fiscal 2017 and dividend equivalent payments. Also contributing to the use of cash was $1,284.7 million in debt service payments on the existing term loans and the remaining principal on the tranche C term loans, redemption and related premium paid on the 2021 Notes aggregating to $528.8 million and $389.8 million related to treasury stock purchases under the Company's share repurchase program. Slightly offsetting the uses of cash were net proceeds from the 2017 term loans (tranche F and tranche G term loans) of $2,937.7 million and the additional 2025 Notes offering of $300.4 million, $99.5 million in net proceeds from an additional A/R Securitization draw in the fourth quarter of fiscal 2017 and $21.2 million in proceeds from stock option exercises.

Description of Senior Secured Term Loans and Indentures

Senior Secured Credit Facilities

TransDigm has $7,523.5 million in fully drawn term loans (the “Term Loans Facility”) and a $760.0 million revolving credit facility. The Term Loans Facility consists of three tranches of term loans as follows (aggregate principal amount disclosed is as of September 30, 2019):

Term Loans Facility	Aggregate Principal	Maturity Date	Interest Rate
Tranche E	$2,221.2 million	May 30, 2025	LIBO rate + 2.5%
Tranche F	$3,524.1 million	June 9, 2023	LIBO rate + 2.5%
Tranche G	$1,778.2 million	August 22, 2024	LIBO rate + 2.5%

The Term Loans Facility requires quarterly aggregate principal payments of $19.1 million. The revolving commitments consist of two tranches which include up to $151.5 million of multicurrency revolving commitments. At September 30, 2019, the Company had $41.5 million in letters of credit outstanding and $718.5 million in borrowings available under the revolving commitments.

The interest rates per annum applicable to the loans under the Credit Agreement are, at TransDigm’s option, equal to either an alternate base rate or an adjusted LIBO rate for one, two, three or six-month (or to the extent agreed to by each relevant lender, nine or twelve-month) interest periods chosen by TransDigm, in each case plus an applicable margin percentage. The adjusted LIBO rate related to tranche E, tranche F and tranche G term loans are not subject to a floor. For the fiscal year ended September 30, 2019, the applicable interest rates ranged from approximately 4.7% to 5.0% on the existing term loans. Interest rate swaps and caps used to hedge and offset, respectively, the variable interest rates on the credit facility are described in Note 21, “Derivatives and Hedging Activities,” to the consolidated financial statements.

Recent Amendments to the Credit Agreement

On March 14, 2019, the Company entered into Amendment No. 6 to the Second Amended and Restated Credit Agreement ("Amendment No. 6"). Under the terms of Amendment No. 6, the capacity of the revolving credit facility increased from $600.0 million to $760.0 million. The revolving commitments consist of two tranches which include up to $151.5 million of multicurrency revolving commitments. The terms and conditions that apply to the revolving credit facility, other than the additional revolving credit commitments, are substantially the same as the terms and conditions that applied to the revolving credit facility immediately prior to Amendment No. 6.

Indentures

Senior Subordinated Notes	Aggregate Principal	Maturity Date	Interest Rate
2022 Notes	$1,150 million	July 15, 2022	6.00%
2024 Notes	$1,200 million	July 15, 2024	6.50%
2025 Notes	$750 million	May 15, 2025	6.50%
2026 Secured Notes	$4,000 million	March 15, 2026	6.25%
6.875% 2026 Notes	$500 million	May 15, 2026	6.875%
6.375% 2026 Notes	$950 million	June 15, 2026	6.375%
2027 Notes	$550 million	March 15, 2027	7.50%

The 2022 Notes, the 2024 Notes, the 6.375% 2026 Notes and the 2027 Notes (the “TransDigm Inc. Notes”) were issued at a price of 100% of the principal amount. The initial $450 million offering of the 2025 Notes (also considered to be part of the “TransDigm Inc. Notes”) were issued at a price of 100% of the principal amount and the subsequent $300 million offering of 2025 Notes in the second quarter of fiscal 2017 were issued at a price of 101.5% of the principal amount, resulting in gross proceeds of $304.5 million. The 6.875% 2026 Notes (the "TransDigm UK Notes" and together with the TransDigm Inc. Notes, the "Notes") offered in May 2018 were issued at a price of 99.24% of the principal amount, resulting in gross proceeds of $496.2 million. The initial $3,800 million offering of the 2026 Secured Notes (the "Secured Notes") were issued at a price of 100% of their principal amount and the subsequent $200 million offering of the 2026 Secured Notes in the second quarter of fiscal 2019 were issued at a price of 101% of their principal amount, resulting in gross proceeds of $4,002 million.

The Notes do not require principal payments prior to their maturity. Interest under the Notes is payable semi-annually. The Notes represent our unsecured obligations ranking subordinate to our senior debt, as defined in the applicable indentures.

The Notes are subordinated to all of our existing and future senior debt, rank equally with all of our existing and future senior subordinated debt and rank senior to all of our future debt that is expressly subordinated to the Notes. The TransDigm Inc. Notes are guaranteed on a senior subordinated unsecured basis by TD Group and TransDigm Inc.'s domestic restricted subsidiaries. The TransDigm UK Notes are guaranteed on a senior subordinated basis by TransDigm Inc., TD Group and TransDigm Inc.'s domestic restricted subsidiaries. The guarantees of the Notes are subordinated to all of the guarantors' existing and future senior debt, rank equally with all of their existing and future senior subordinated debt and rank senior to all of their future debt that is expressly subordinated to the guarantees of the Notes. The Notes are structurally subordinated to all of the liabilities of TD Group's non-guarantor subsidiaries. The Notes contain many of the restrictive covenants included in the Credit Agreement. TransDigm is in compliance with all of the covenants contained in the Notes.

On January 30, 2019, the Company entered into a purchase agreement in connection with a private offering of $3.8 billion aggregate principal amount in 6.25% senior secured notes due 2026. In addition, on February 1, 2019, the Company entered into a purchase agreement in connection with a private offering of $200 million aggregate principal amount of 6.25% senior secured notes due 2026. All $4.0 billion aggregate principal amount of the secured notes constituted a single class and were issued under a single indenture (herein the "2026 Secured Notes"). The notes in the first secured notes offering were issued at a price of 100% of their principal amount and the notes in the second secured notes offering were issued at a price of 101% of their principal amount. The Notes are guaranteed, with certain exceptions, by TransDigm Group, TransDigm UK and all of TransDigm Inc.'s existing U.S. subsidiaries on a senior secured basis. The 2026 Secured Notes offerings closed on February 13, 2019 and mature on March 15, 2026.

On February 13, 2019, the Company announced a cash tender offer for any and all of Esterline's outstanding 2020 Notes. On March 15, 2019, the Company redeemed the principal amount of $550 million in 2020 Notes, plus accrued and unpaid interest of approximately $12.6 million. The Company wrote off $1.7 million in unamortized debt issuance costs during the fiscal year ended September 30, 2019 in conjunction with the redemption of the 2020 Notes.

On March 14, 2019, in connection with the closing of the acquisition of Esterline, the Company announced a cash tender offer for any and all of its outstanding 2023 Notes. On April 15, 2019, the Company redeemed the principal amount of approximately $373.8 million (€330.0 million as the 2023 Notes were denominated in Euros), plus accrued interest of approximately $6.8 million, the early redemption premium of $6.8 million and fees of approximately $0.2 million.

On October 29, 2019, the Company entered into a purchase agreement in connection with a private offering of $2.65 billion aggregate principal amount in 5.50% senior subordinated notes due November 15, 2027. The settlement of the debt financing transaction occurred on November 13, 2019. The notes were issued at a price of 100% of their principal amount. The Company will use a portion of the net proceeds from the offering of the notes to redeem all of its outstanding 2022 Notes. The remaining net proceeds will be used for general corporate purposes, which may include potential future acquisitions, dividends or repurchases under its stock repurchase program.

Certain Restrictive Covenants in Our Debt Documents

The Credit Agreement and the Indentures governing the Notes contain restrictive covenants that, among other things, limit the incurrence of additional indebtedness, the payment of special dividends, transactions with affiliates, asset sales, acquisitions, mergers and consolidations, liens and encumbrances, and prepayments of certain other indebtedness.

The restrictive covenants included in the Credit Agreement are subject to amendments executed periodically. The most recent amendment that impacted the restrictive covenants contained in the Credit Agreement is Amendment No. 6 which is described above in the *Recent Amendments to the Credit Agreement* section.

Under the terms of the Credit Agreement, TransDigm is entitled, on one or more occasions, to request additional term loans or additional revolving commitments to the extent that the existing or new lenders agree to provide such incremental term loans or additional revolving commitments provided that, among other conditions, our consolidated net leverage ratio would be no greater than 7.25 to 1.00 and the consolidated secured net debt ratio would be no greater than 5.00 to 1.00, in each case, after giving effect to such incremental term loans or additional revolving commitments.

The Credit Agreement requires mandatory prepayments of principal based on certain percentages of Excess Cash Flow (as defined in the Credit Agreement), commencing 90 days after the end of each fiscal year, subject to certain exceptions. In addition, subject to certain exceptions (including, with respect to asset sales, the reinvestment in productive assets), TransDigm will be required to prepay the loans outstanding under the Credit Agreement at 100% of the principal amount thereof, plus accrued and unpaid interest, with the net cash proceeds of certain asset sales and issuance or incurrence of certain indebtedness. No matters mandating prepayments occurred during the quarter ended September 30, 2019.

In addition, under the Credit Agreement, if the usage of the revolving credit facility exceeds 35% of the total revolving commitments, the Company will be required to maintain a maximum consolidated net leverage ratio of net debt, as defined, to trailing four-quarter EBITDA As Defined. A breach of any of the covenants or an inability to comply with the required leverage ratio could result in a default under the Credit Agreement or the Indentures.

If any such default occurs, the lenders under the Credit Agreement and the holders of the Notes may elect to declare all outstanding borrowings, together with accrued interest and other amounts payable thereunder, to be immediately due and payable. The lenders under the Credit Agreement also have the right in these circumstances to terminate any commitments they have to provide further borrowings. In addition, following an event of default under the Credit Agreement, the lenders thereunder will have the right to proceed against the collateral granted to them to secure the debt, which includes our available cash, and they will also have the right to prevent us from making debt service payments on the Notes.

As of September 30, 2019, the Company was in compliance with all of its debt covenants.

Trade Receivables Securitization

During fiscal 2014, the Company established a trade receivable securitization facility (the “Securitization Facility”). The Securitization Facility effectively increases the Company’s borrowing capacity depending on the amount of the domestic operations’ trade accounts receivable. The Securitization Facility includes the right for the Company to exercise annual one year extensions as long as there have been no termination events as defined by the agreement. The Company uses the proceeds from the Securitization Facility as an alternative to other forms of debt, effectively reducing borrowing costs. On July 30, 2019, the Company amended the Securitization Facility to extend the maturity date to July 31, 2020. As of September 30, 2019, the Company has borrowed $350 million under the Securitization Facility, which bears interest at a rate of 0.9% plus LIBOR. At September 30, 2019, the applicable interest rate was 2.94%. The Securitization Facility is collateralized by substantially all of the Company’s domestic operations’ trade accounts receivable.

Stock Repurchase Program

On November 8, 2017, our Board of Directors, authorized a stock repurchase program permitting repurchases of our outstanding shares not to exceed $650 million in the aggregate, subject to any restrictions specified in the Credit Agreement and/or Indentures governing the existing Notes. No repurchases were made under the program during the fiscal years ended September 30, 2019 and 2018. As of September 30, 2019, $650 million in repurchases are allowable under the program subject to any restrictions specified in the Credit Agreement and/or Indentures governing the existing Notes.

Contractual Obligations

The following is a summary of contractual cash obligations as of September 30, 2019 (in millions):

	2020	2021	2022	2023	2024	2025 and thereafter	Total
Senior Secured Term Loans[1]	$ 76.4	$ 76.4	$ 76.4	$ 3,457.4	$ 1,728.4	$ 2,108.4	$ 7,523.4
2022 Notes[2]	—	—	1,150.0	—	—	—	1,150.0
2024 Notes	—	—	—	—	1,200.0	—	1,200.0
2025 Notes	—	—	—	—	—	750.0	750.0
6.875% 2026 Notes	—	—	—	—	—	500.0	500.0
6.375% 2026 Notes	—	—	—	—	—	950.0	950.0
2026 Secured Notes	—	—	—	—	—	4,000.0	4,000.0
2027 Notes	—	—	—	—	—	550.0	550.0
Securitization Facility	350.0	—	—	—	—	—	350.0
Scheduled Interest Payments[3]	912.9	888.0	906.3	837.5	703.5	730.4	4,978.6
Government Refundable Advances	3.0	3.2	3.3	3.5	3.7	22.5	39.2
Operating Leases	22.3	31.5	17.2	14.1	12.5	27.8	125.4
Capital Leases	1.5	2.4	2.4	1.6	1.6	40.3	49.8
Pension Funding Minimums	9.1	7.8	7.6	7.7	7.8	39.5	79.5
Purchase Obligations	631.0	57.7	19.0	6.5	2.2	14.4	730.8
Total Contractual Cash Obligations	$ 2,006.2	$ 1,067.0	$ 2,182.2	$ 4,328.3	$ 3,659.7	$ 9,733.3	$ 22,976.7

(1) The tranche E term loans mature in May 2025, the tranche F term loans mature in June 2023, and the tranche G term loans mature in August 2024. The term loans require quarterly principal payments totaling $19.1 million.

(2) The 2022 Notes will be fully redeemed in the first quarter of fiscal 2020 in connection with the issuance of $2,650.0 million of new 2027 notes. Since this transaction occurred after September 30, 2019, it is not reflected in the contractual obligations table.

(3) Assumes that the variable interest rate on our tranche E, tranche F and tranche G borrowings under our Senior Secured Term Loans range from approximately 4.7% to 5.0% based on anticipated movements in the LIBO rate. In addition, interest payments include the impact of the existing interest rate swap and cap agreements described in Note 21, “Derivatives and Hedging Activities” to the consolidated financial statements herein.

In addition to the contractual obligations set forth above, the Company incurs capital expenditures for the purpose of maintaining and replacing existing equipment and facilities and, from time to time, for facility expansion. Capital expenditures totaled approximately $101.6 million, $73.3 million, and $71.0 million during fiscal years 2019, 2018, and fiscal 2017, respectively. The Company estimates its capital expenditures in fiscal year 2020 to be between $160 million and $190 million with the increase from previous years attributable to the Esterline businesses being under TransDigm ownership for the entire fiscal year period.

Off-Balance Sheet Arrangements

The Company utilizes letters of credit to back certain payment and performance obligations. Letters of credit are subject to limits based on amounts outstanding under the Company’s revolving credit facility. As of September 30, 2019, the Company had $41.5 million in letters of credit outstanding.

New Accounting Standards

For information about new accounting standards, see Note 4, “Recent Accounting Pronouncements,” to our consolidated financial statements included herein.

Additional Disclosure Required by Indentures

Separate financial statements of TransDigm Inc. are not presented because TransDigm Inc.’s 2022 Notes, 2024 Notes, 2025 Notes, 6.375% 2026 Notes, 2026 Secured Notes and 2027 Notes are fully and unconditionally guaranteed on a senior subordinated basis by TD Group, TransDigm UK and all of TransDigm Inc's Domestic Restricted Subsidiaries and because TD Group has no significant operations or assets separate from its investment in TransDigm Inc.

Separate financial statements of TransDigm UK are not presented because TransDigm UK's 6.875% 2026 Notes, issued in May 2018, are fully and unconditionally guaranteed on a senior subordinated basis by TD Group, TransDigm Inc. and all of TransDigm Inc.'s Domestic Restricted Subsidiaries.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

Our main exposure to market risk relates to interest rates. Our financial instruments that are subject to interest rate risk principally include fixed-rate and floating-rate long-term debt. At September 30, 2019, we had borrowings under our term loans of approximately $7,524 million that were subject to interest rate risk. Borrowings under our term loans bear interest, at our option, at a rate equal to either an alternate base rate or an adjusted LIBOR for a one-, two-, three- or six-month (or to the extent available to each lender, nine- or twelve-month) interest period chosen by us, in each case, plus an applicable margin percentage. Accordingly, the Company’s cash flows and earnings will be exposed to the market risk of interest rate changes resulting from variable rate borrowings under our term loans. The Company's objective is to maintain an allocation of at least 75% fixed rate and 25% variable rate debt thereby limiting its exposure to changes in near-term interest rates. As of September 30, 2019, approximately 83% of our debt was fixed rate debt. The effect of a hypothetical one percentage point increase in interest rates would increase the annual interest costs under our term loans by approximately $75 million based on the amount of outstanding borrowings at September 30, 2019. The weighted average interest rate on the $7,524 million of borrowings under our term loans on September 30, 2019 was 4.8%.

Interest rate swaps and caps used to hedge and offset, respectively, the variable interest rates on the credit facility are described in Note 21, “Derivatives and Hedging Activities,” to our consolidated financial statements included herein. We do not hold or issue derivative instruments for speculative purposes.

For information about the fair value of the aggregate principal amount of borrowings under our term loans and the fair value of the Notes, see Note 20, “Fair Value Measurements,” to our consolidated financial statements included herein.

Foreign Currency Risk

Certain of our foreign subsidiaries’ sales and results of operations are subject to the impact of foreign currency fluctuations. Because our consolidated financial statements are presented in U.S. dollars, increases or decreases in the value of the U.S. dollar relative to other currencies in which we transact business could materially adversely affect our net sales, net income and the carrying values of our assets located outside the U.S. Global economic uncertainty continues to exist. Strengthening of the U.S. dollar relative to other currencies may adversely affect our operating results.

If the U.S. dollar were to strengthen, our foreign results of operations would be unfavorably impacted, but the effect is not expected to be material. A 10% change in foreign currency exchange rates would not have resulted in a material impact to net income for the fiscal years ended September 30, 2019 and 2018.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by this Item is contained on pages F-1 through F-59 of this Report.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As of September 30, 2019, TD Group carried out an evaluation, under the supervision and with the participation of TD Group's management, including its President, Chief Executive Officer and Director (Principal Executive Officer) and Chief Financial Officer (Principal Financial Officer), of the effectiveness of the design and operation of TD Group's disclosure controls and procedures. Based upon that evaluation, the President, Chief Executive Officer and Director and Chief Financial Officer concluded that TD Group's disclosure controls and procedures are effective to ensure that information required to be disclosed by TD Group in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified by the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to TD Group's management, including its President, Chief Executive Officer and Director and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, TD Group's management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management necessarily was required to apply its judgment in designing and evaluating the controls and procedures.

Management's Report on Internal Control Over Financial Reporting

The management of TD Group is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Exchange Act Rule 13a-15(f). Using criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (COSO) in Internal Control-Integrated Framework, TransDigm's management assessed the effectiveness of the Company's internal control over financial reporting as of September 30, 2019. Based on our assessment, management concluded that the Company's internal control over financial reporting was effective as of September 30, 2019.

During fiscal 2019, we completed the acquisition of all of the outstanding stock of Esterline and of assets of certain product lines. The results of operations are included in our consolidated financial statements from the date of acquisition. As permitted by the Securities and Exchange Commission rules and regulations, we have excluded these acquisitions from our assessment of the effectiveness of our internal control over financial reporting as of September 30, 2019. Total assets as of September 30, 2019, net sales and income from continuing operations before income taxes for the fiscal year ended September 30, 2019 for these fiscal 2019 acquisitions constituted approximately 26%, 18% and 6%, respectively, of each of these key measures as reported in our consolidated financial statements.

The effectiveness of the Company's internal control over financial reporting as of September 30, 2019 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report, which is included elsewhere in this Annual Report on Form 10-K and is incorporated herein by reference.

Changes in Internal Control Over Financial Reporting

There have been no changes in the Company's internal control over financial reporting that occurred during the fourth quarter of fiscal 2019 that materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders of
TransDigm Group Incorporated

Opinion on Internal Control over Financial Reporting

We have audited TransDigm Group Incorporated's ("the Company") internal control over financial reporting as of September 30, 2019, based on criteria established in Internal Control- Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 30, 2019, based on the COSO criteria**.**

As indicated in the accompanying Management's Report on Internal Control Over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of the acquisitions of Esterline and of assets of certain product lines, which are included in the 2019 consolidated financial statements of TransDigm Group Incorporated and constituted 26% of total assets as of September 30, 2019, 18% of net sales and 6% of income from continuing operations before income taxes for the year then ended. Our audit of internal control over financial reporting of TransDigm Group Incorporated also did not include an evaluation of the internal control over financial reporting of the acquisitions of Esterline and of assets of certain product lines.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of September 30, 2019 and 2018, the related consolidated statements of income, comprehensive income, cash flows and changes in stockholders' deficit for each of the three years in the period ended September 30, 2019 and the related notes and financial statement schedule listed in the Index at Item 15(a) of the Company and our report dated November 19, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying management's report on internal control over financial reporting in Item 9A of the Form 10-K. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP

Cleveland, Ohio
November 19, 2019

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE

Directors and Executive Officers

Information regarding TD Group’s directors will be set forth under the caption “Proposal One: Election of Directors” in our Proxy Statement, which is incorporated herein by reference. The following table sets forth certain information concerning TD Group’s executive officers:

Name	Age	Position
W. Nicholas Howley	67	Executive Chairman of the Board of Directors
Kevin Stein	53	President, Chief Executive Officer and Director
Robert S. Henderson	63	Vice Chairman
Jorge L. Valladares III	45	Chief Operating Officer
Michael Lisman	37	Chief Financial Officer
Sarah Wynne	45	Chief Accounting Officer
Bernt G. Iversen II	62	Executive Vice President—Mergers & Acquisitions and Business Development
Halle Terrion	51	General Counsel, Chief Compliance Officer & Secretary

Mr. Howley was appointed Executive Chairman of the Board of Directors of TD Group in April 2018. Mr. Howley previously served as Chairman of the Board of Directors of TD Group from July 2003 to April 2018. He served as Chief Executive Officer of TD Group from December 2005 to April 2018 and of TransDigm Inc. from December 2001 to March 2018. Mr. Howley served as President of TD Group from July 2003 through December 2015, as Chief Operating Officer of TransDigm Inc. from December 1998 through December 2001 and as President of TransDigm Inc. from December 1998 through September 2005.

Mr. Stein was appointed President, Chief Executive Officer and Director in April 2018. Prior to that, Mr. Stein served as President and Chief Operating Officer from January 2017 through March 2018 and Chief Operating Officer—Power from October 2014 to December 2016. Prior to joining TransDigm, Mr. Stein served as Executive Vice President and President of the Structurals division of Precision Castparts Corp. from November 2011 to October 2014 and Executive Vice President and President of the Fasteners division of Precision Castparts Corp. from January 2009 through November 2011.

Mr. Henderson was appointed Vice Chairman in January 2017. Prior to that, Mr. Henderson served as Chief Operating Officer—Airframe from October 2014 to December 2016. Mr. Henderson also previously served as Executive Vice President from December 2005 to October 2014, and as President of the AdelWiggins Group, a division of TransDigm Inc., from August 1999 to April 2008.

Mr. Valladares was appointed Chief Operating Officer in April 2019. Prior to that, Mr. Valladares served as Chief Operating Officer — Power & Control from June 2018 to March 2019, Executive Vice President from October 2013 to May 2018, as President of AvtechTyee, Inc. (formerly Avtech Corporation), a wholly-owned subsidiary of TransDigm Inc., from August 2009 to September 2013, and as President of AdelWiggins Group, a division of TransDigm Inc., from April 2008 to July 2009.

Mr. Lisman was appointed Chief Financial Officer in July 2018. Prior to that, Mr. Lisman served as Vice President—Mergers and Acquisitions from January 2018 through June 2018, Business Unit Manager for the Air & Fuel Valves business unit at Aero Fluid Products, a wholly-owned subsidiary of TransDigm Inc., from January 2017 to January 2018 and Director of Mergers and Acquisitions of the Company from November 2015 to January 2017.

Ms. Wynne was appointed Chief Accounting Officer in November 2018. Prior to that, Ms. Wynne served as Group Controller from April 2015 to October 2018, as Controller of the Aero Fluid Products division of AeroControlex Group, Inc., a wholly-owned subsidiary of TransDigm Inc., from October 2009 to March 2015, and previously in other accounting roles with the Company.

Mr. Iversen was appointed Executive Vice President—Mergers & Acquisitions and Business Development in May 2012. Prior to that, Mr. Iversen served as Executive Vice President of TD Group from December 6, 2010 through May 2012 and as President of Champion Aerospace LLC, a wholly-owned subsidiary of TransDigm Inc., from June 2006 to December 2010.

Ms. Terrion was appointed General Counsel and Chief Compliance Officer in March 2012 and Secretary in May 2015. Prior to that, Ms. Terrion was a partner at BakerHostetler LLP.

Section 16(a) Beneficial Ownership Reporting Compliance

The information regarding compliance with Section 16 of the Securities Exchange Act of 1934 will be set forth under the caption entitled “Section 16(a) Beneficial Ownership Reporting Compliance” in our Proxy Statement, which is incorporated herein by reference.

Code of Ethics

We have adopted a Code of Business Conduct and Ethics, which applies to all of our directors, officers, and employees and a Code of Ethics for Senior Financial Officers which includes additional ethical obligations for our senior financial management (which includes our executive chairman, president and chief executive officer, vice chairman, chief operating officer, chief financial officer, chief accounting officer, division presidents, controllers, treasurer, and chief internal auditor). Please refer to the information set forth under the caption “Corporate Governance—Codes of Ethics & Whistleblower Policy” in our Proxy Statement, which is incorporated herein by reference. Our Code of Business Conduct and Ethics and our Code of Ethics for Senior Financial Officers is available on our website at *www.transdigm.com*. Any person may receive a copy without charge by writing to us at TransDigm Group Incorporated, 1301 East 9th Street, Suite 3000, Cleveland, Ohio 44114. We intend to disclose on our website any amendment to, or waiver from, a provision of our Code of Business Conduct and Ethics that applies to directors and executive officers and that is required to be disclosed pursuant to the rules of the Securities and Exchange Commission.

Nominations of Directors

The procedure by which stockholders may recommend nominees to our Board of Directors will be set forth under the caption “Corporate Governance-Board Committees—Nominating and Corporate Governance Committee” in our Proxy Statement, which is incorporated herein by reference.

Audit Committee

The information regarding the audit committee of our Board of Directors and audit committee financial experts will be set forth under the caption “Corporate Governance-Board Committees—Audit Committee” in our Proxy Statement, which is incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item will be set forth under the captions “Executive Compensation”, “Compensation of Directors”, “Compensation Committee Interlocks and Insider Participation” and “Compensation Committee Report” in our Proxy Statement, which is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information regarding security ownership of certain beneficial owners and management will be set forth under the caption “Security Ownership of Certain Beneficial Owners and Management” in our Proxy Statement, which is incorporated herein by reference.

Equity Compensation Plan Information

Plan category	Number of Securities to Be Issued upon Exercise of Outstanding Options, Warrants and Rights (a)		Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (b)		Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a)) (c)	
Equity compensation plans approved by security holders[1]	6,379,309	(2)	$	238.64	5,797,892	(3)

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(1) Includes information related to the 2003 stock option plan, the 2006 stock incentive plan and the 2014 stock option plan.

(2) This amount represents 77,829, 3,134,022 and 3,167,458 shares subject to outstanding stock options under our 2003 stock option plan, 2006 stock incentive plan and 2014 stock option plan, respectively. No further grants may be made under our 2003 stock option plan and 2006 stock incentive plan, although outstanding stock options continue in force in accordance with their terms.

(3) This amount represents remaining shares available for award under our 2014 stock option plan and 2019 stock option plan. In August 2019, the 2019 stock option plan was adopted by the Board of Directors of TD Group and was subsequently approved by stockholders on October 3, 2019. The 2019 stock option plan permits TD Group to award stock options to our key employees, directors or consultants. The total number shares of TD Group common stock reserved for issuance or delivery under the 2019 stock option plan is 4,000,000, subject to adjustment in the event of any stock dividend or split, reorganization, recapitalization, merger, share exchange or any other similar corporate transaction or event. No shares have been issued from TD Group’s 2019 stock option plan.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item will be set forth under the captions entitled “Certain Relationships and Related Transactions,” “Compensation of Directors,” and “Independence of Directors” in our Proxy Statement, which is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item will be set forth under the caption “Principal Accounting Fees and Services” in our Proxy Statement, which is incorporated herein by reference.

PART IV

15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Documents Filed with Report

(a) (1) Financial Statements

(a) (2) Financial Statement Schedules

(a) (3) Exhibits

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
2.1	Agreement and Plan of Merger dated as of October 9, 2018, by and among Esterline Technologies Corporation, TransDigm Group Incorporated and Thunderbird Merger Sub Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed October 11, 2018 (File No. 001-32833)
2.2	First Amendment to Agreement and Plan of Merger dated as of October 10, 2018, by and among Esterline Technologies Corporation, TransDigm Group Incorporated and Thunderbird Merger Sub Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed October 11, 2018 (File No. 001-32833)
3.1	Second Amended and Restated Certificate of Incorporation, filed April 28, 2014, of TransDigm Group Incorporated	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed April 28, 2014 (File No. 001-32833)
3.2	Third Amended and Restated Bylaws of TransDigm Group Incorporated	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed January 30, 2018 (File No. 001-32833)
3.3	Certificate of Incorporation, filed July 2, 1993, of NovaDigm Acquisition, Inc. (now known as TransDigm Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed January 29, 1999 (File No. 333-71397)
3.4	Certificate of Amendment, filed July 22, 1993, of the Certificate of Incorporation of NovaDigm Acquisition, Inc. (now known as TransDigm Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed January 29, 1999 (File No. 333-71397)
3.5	Bylaws of NovaDigm Acquisition, Inc. (now known as TransDigm Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed January 29, 1999 (File No. 333-71397)
3.6	Certificate of Incorporation, filed July 10, 2009, of Acme Aerospace, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 5, 2009 (File No. 001-32833)
3.7	By-laws of Acme Aerospace, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 5, 2009 (File No. 001-32833)
3.8	Articles of Incorporation, filed July 30, 1986, of ARP Acquisition Corporation (now known as Adams Rite Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed April 23, 1999 (File No. 333-71397)
3.9	Certificate of Amendment, filed September 12, 1986, of the Articles of Incorporation of ARP Acquisition Corporation (now known as Adams Rite Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed April 23, 1999 (File No. 333-71397)
3.10	Certificate of Amendment, filed January 27, 1992, of the Articles of Incorporation of Adams Rite Products, Inc. (now known as Adams Rite Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed April 23, 1999 (File No. 333-71397)
3.11	Certificate of Amendment, filed December 31, 1992, of the Articles of Incorporation of Adams Rite Products, Inc. (now known as Adams Rite Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed April 23, 1999 (File No. 333-71397)
3.12	Certificate of Amendment, filed August 11, 1997, of the Articles of Incorporation of Adams Rite Sabre International, Inc. (now known as Adams Rite Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed April 23, 1999 (File No. 333-71397)
3.13	Amended and Restated Bylaws of Adams Rite Aerospace, Inc.	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed April 23, 1999 (File No. 333-71397)
3.14	Certificate of Incorporation, filed June 18, 2007, of AeroControlex Group, Inc.	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed July 6, 2007 (File No. 333-144366)
3.15	By-laws of AeroControlex Group, Inc.	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed July 6, 2007 (File No. 333-144366)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.16	Certificate of Formation, filed September 25, 2013, of Aerosonic LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.17	Limited Liability Company Agreement of Aerosonic LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.18	Certificate of Incorporation, filed November 13, 2009, of Airborne Acquisition, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.19	Bylaws of Airborne Acquisition, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.20	Amended and Restated Certificate of Incorporation, filed January 25, 2010, of HDT International Holdings, Inc. (now known as Airborne Global, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.21	Certificate of Amendment of Certificate of Incorporation, filed February 24, 2010, of HDT International Holdings, Inc. (now known as Airborne Global, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.22	Certificate of Amendment of Certificate of Incorporation, filed December 10, 2013, of HDT Global, Inc. (now known as Airborne Global, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.23	Bylaws of HDT International Holdings, Inc. (now known as Airborne Global, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.24	Certificate of Incorporation, filed November 13, 2009, of Airborne Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.25	Bylaws of Airborne Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.26	Certificate of Incorporation, filed September 1, 1995, of Wardle Storeys Inc. (now known as Airborne Systems NA Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.27	Certificate of Amendment to Certificate of Incorporation, filed May 28, 2002, of Wardle Storeys Inc. (now known as Airborne Systems NA Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.28	Bylaws of Airborne Systems NA Inc., as amended	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.29	Certificate of Incorporation, filed April 23, 2007, of Airborne Systems North America Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.30	Bylaws of Airborne Systems North America Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.31	Certificate of Incorporation, filed April 25, 1989, of Irvin Industries (Del), Inc. (now known as Airborne Systems North America of CA Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.32	Certificate of Amendment of Certificate of Incorporation, filed June 2, 1989, of Irvin Industries (Del), Inc. (now known as Airborne Systems North America of CA Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.33	Certificate of Amendment of Certificate of Incorporation, filed April 30, 1996, of Irvin Industries, Inc. (now known as Airborne Systems North America of CA Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.34	Certificate of Amendment to Certificate of Incorporation, filed April 23, 2007, of Irvin Aerospace Inc. (now known as Airborne Systems North America of CA Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.35	Bylaws of Airborne Systems North America of CA Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.36	Certificate of Incorporation, Profit, filed October 28, 1994, of Wardle Storeys (Parachutes) Inc. (now known as Airborne Systems North America of NJ Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.37	Certificate of Merger, filed February 9, 1995, of Para-Flite Inc. with and into Wardle Storeys (Parachutes) Inc. (now known as Airborne Systems North America of NJ Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.38	Certificate of Amendment to Certificate of Incorporation, filed April 23, 2007, of Para-Flite Inc. (now known as Airborne Systems North America of NJ Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.39	Certificate of Correction to Certificate of Incorporation, filed June 27, 2007, of Airborne Systems North America of NJ Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.40	Bylaws, as amended, of Airborne Systems North America of NJ Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.41	Certificate of Incorporation, filed May 8, 1985, of Am-Safe, Inc. (now known as AmSafe, Inc.)	Incorporated by reference to Form TransDigm Group Incorporated's 10-Q, filed May 9, 2012 (File No. 001-32833)
3.42	Certificate of Amendment of Certificate of Incorporation, filed May 19, 2005, of Am-Safe, Inc. (now known as AmSafe, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.43	By-Laws of Am-Safe, Inc. (now known as AmSafe, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.44	Certificate of Incorporation, filed October 16, 2007, of AmSafe Global Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.45	Second Amended and Restated By-Laws of AmSafe Global Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.46	Restated Certificate of Incorporation, filed July 10, 1967, of Arkwin Industries, Inc.	Incorporated by reference to Amendment No. 3 to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed June 27, 2013 (File No. 333-186494)
3.47	Certificate of Amendment of Certificate of Incorporation, filed November 4, 1981, of Arkwin Industries, Inc.	Incorporated by reference to Amendment No. 3 to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed June 27, 2013 (File No. 333-186494)
3.48	Certificate of Amendment of Certificate of Incorporation, filed June 11, 1999, of Arkwin Industries, Inc.	Incorporated by reference to Amendment No. 3 to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed June 27, 2013 (File No. 333-186494)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.49	By-laws of Arkwin Industries, Inc.	Incorporated by reference to Amendment No. 3 to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed June 27, 2013 (File No. 333-186494)
3.50	Amended and Restated Certificate of Incorporation of Aviation Technologies, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.51	By-laws of Wings Holdings, Inc. (now known as Aviation Technologies, Inc.)	Incorporated by reference to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed July 6, 2007 (File No. 333-144366)
3.52	Certificate of Formation, effective June 28, 2007, of Avionic Instruments LLC	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.53	Limited Liability Company Agreement of Avionic Instruments LLC	Incorporated by reference to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed July 6, 2007 (File No.333-144366)
3.54	Articles of Incorporation, filed December 29, 1992, of Avionics Specialties, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.55	Bylaws of Avionics Specialties, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.56	Articles of Incorporation, filed October 3, 1963, of Avtech Corporation (now known as AvtechTyee, Inc.)	Incorporated by reference to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed July 6, 2007 (File No. 333-144366)
3.57	Amendment to Articles of Incorporation, filed March 30, 1984, of Avtech Corporation (now known as AvtechTyee, Inc.)	Incorporated by reference to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed July 6, 2007 (File No. 333-144366)
3.58	Amendment to Articles of Incorporation, filed April 17, 1989, of Avtech Corporation (now known as AvtechTyee, Inc.)	Incorporated by reference to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed July 6, 2007 (File No. 333-144366)
3.59	Articles of Amendment of Articles of Incorporation, filed July 17, 1998, of Avtech Corporation (now known as AvtechTyee, Inc.)	Incorporated by reference to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed July 6, 2007 (File No. 333-144366)
3.60	Articles of Amendment to Articles of Incorporation, filed May 20, 2003, of Avtech Corporation (now known as Avtech Tyee, Inc.)	Incorporated by reference to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed July 6, 2007 (File No. 333-144366)
3.61	Articles of Amendment to Articles of Incorporation, filed May 2, 2012, of AvtechTyee, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 16, 2012 (File No. 001-32833)
3.62	By-laws of Avtech Corporation (now known as AvtechTyee, Inc.)	Incorporated by reference to TransDigm Inc.’s and TransDigm Group Incorporated’s Form S-4, filed July 6, 2007 (File No. 333-144366)
3.63	Certificate of Incorporation, filed October 24, 1977, of Transformer Technology Corporation (now known as Beta Transformer Technology Corporation)	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 15, 2016 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.64	Certificate of Amendment of Certificate of Incorporation, filed December 1, 1977, of Transformer Technology Corporation (now known as Beta Transformer Technology Corporation)	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.65	By-laws of Transformer Technology Corporation (now known as Beta Transformer Technology Corporation)	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.66	Amended and Restated Limited Liability Company Agreement, filed July 7, 2016, of Beta Transformer Technology LLC	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.67	Limited Liability Company Certificate of Formation of Breeze-Eastern LLC	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 11, 2016 (File No. 001-32833)
3.68	Limited Liability Company Agreement of Breeze-Eastern LLC	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 11, 2016 (File No. 001-32833)
3.69	Articles of Incorporation, filed February 6, 1998, of Air Carrier Acquisition Corp. (now known as Bridport-Air Carrier, Inc.)	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.70	Articles of Amendment, filed February 23, 1998, of Air Carrier Acquisition Corp. (now known as Bridport-Air Carrier, Inc.)	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.71	Articles of Amendment, filed December 14, 1999, of Bridport-Air Carrier, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.72	Amended and Restated By-Laws of Bridport-Air Carrier, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.73	Certificate of Incorporation, filed May 9, 2000, of Erie Acquisition Corp. (now known as Bridport Erie Aviation, Inc.)	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.74	Certificate of Amendment of Certificate of Incorporation, filed May 30, 2000, of Erie Acquisition Corp. (now known as Bridport Erie Aviation, Inc.)	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.75	Certificate of Amendment of Certificate of Incorporation, filed June 19, 2000, of Bridport Erie Aviation, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.76	Amended and Restated By-Laws of Erie Acquisition Corp. (now known as Bridport Erie Aviation, Inc.)	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.77	Certificate of Incorporation, filed July 2, 2004, of Bridport Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.78	Amended and Restated By-Laws of Bridport Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated’s Form 10-Q, filed May 9, 2012 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.79	Certificate of Incorporation, filed August 6, 2007, of Bruce Aerospace Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 21, 2007 (File No. 001-32833)
3.80	By-laws of Bruce Aerospace Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 21, 2007 (File No. 001-32833)
3.81	Articles of Organization of CDA InterCorp LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.82	Operating Agreement of CDA InterCorp LLC	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed July 6, 2007 (File No. 333-144366)
3.83	Certificate of Formation, filed September 30, 2009, of CEF Industries, LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 24, 2009 (File No. 001-32833)
3.84	Limited Liability Company Agreement of CEF Industries, LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 24, 2009 (File No. 001-32833)
3.85	Certificate of Formation, effective June 30, 2007, of Champion Aerospace LLC	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed July 6, 2007 (File No. 333-144366)
3.86	Limited Liability Company Agreement of Champion Aerospace LLC	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed July 6, 2007 (File No. 333-144366)
3.87	Certificate of Incorporation, filed October 23, 1970, of ILC Data Devices Corporation (now known as Data Device Corporation)	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.88	Certificate of Amendment of Certificate of Incorporation, filed April 23, 1999, of ILC Data Device Corporation (now known as Data Device Corporation)	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.89	Certificate of Amendment of Certificate of Incorporation, filed July 14, 2014, of Data Device Corporation	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.90	By-laws of ILC Data Devices Corporation (now known as Data Device Corporation)	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.91	Certificate of Incorporation, filed November 20, 2009, of Dukes Aerospace, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed December 4, 2009 (File No. 001-32833)
3.92	By-laws of Dukes Aerospace, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed December 4, 2009 (File No. 001-32833)
3.93	Certificate of Formation, filed February 29, 2000, of Western Sky Industries, LLC (now known as Electromech Technologies LLC)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)

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Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.94	Certificate of Amendment, filed December 18, 2013, of Western Sky Industries, LLC (now known as Electromech Technologies LLC)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
3.95	Fourth Amended and Restated Limited Liability Agreement of Electromech Technologies LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.96	Articles of Organization, as amended, of HarcoSemco LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.97	First Amended and Restated Limited Liability Company Agreement of HarcoSemco LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.98	Articles of Incorporation, filed May 10, 1957, of Hartwell Aviation Supply Company (now known as Hartwell Corporation)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.99	Certificate of Amendment, filed June 9, 1960, of Articles of Incorporation of Hartwell Aviation Supply Company (now known as Hartwell Corporation)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.100	Certification of Amendment, filed October 23, 1987, of Articles of Incorporation of Hartwell Corporation	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.101	Certificate of Amendment, filed April 9, 1997, of Articles of Incorporation of Hartwell Corporation	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.102	By-laws of Hartwell Corporation	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.103	Amended and Restated Certificate of Incorporation of ILC Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.104	By-laws, as amended, of ILC Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.105	Certificate of Formation, filed January 26, 2007, of Johnson Liverpool LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.106	Amended and Restated Limited Liability Company Agreement of Johnson Liverpool LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.107	Certificate of Incorporation, filed March 28, 1994, of MPT Acquisition Corp. (now known as MarathonNorco Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed January 29, 1999 (File No. 333-71397)
3.108	Certificate of Amendment, filed May 18, 1994, of the Certificate of Incorporation of MPT Acquisition Corp. (now known as MarathonNorco Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed January 29, 1999 (File No. 333-71397)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.109	Certificate of Amendment, filed May 24, 1994, of the Certificate of Incorporation of MPT Acquisition Corp. (now known as MarathonNorco Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed January 29, 1999 (File No. 333-71397)
3.110	Certificate of Amendment, filed August 28, 2003, of the Certificate of Incorporation of Marathon Power Technologies Company (now known as MarathonNorco Aerospace, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 28, 2006 (File No. 001-32833)
3.111	Bylaws of MPT Acquisition Corp. (now known as MarathonNorco Aerospace, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Holding Company's Form S-4, filed January 29, 1999 (File No. 333-71397)
3.112	Certificate of Incorporation, filed April 13, 2007, of McKechnie Aerospace DE, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.113	By-laws of McKechnie Aerospace DE, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.114	Certificate of Incorporation, filed April 25, 2007, of McKechnie Aerospace Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.115	By-laws of McKechnie Aerospace Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.116	Certificate of Formation, filed May 11, 2005, of Melrose US 3 LLC (now known as McKechnie Aerospace US LLC)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.117	Certificate of Amendment, filed May 11, 2007, to Certificate of Formation of Melrose US 3 LLC (now known as McKechnie Aerospace US LLC)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.118	Limited Liability Company Agreement of McKechnie Aerospace US LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.119	Restated Certificate of Incorporation, filed June 27, 2014, of North Hills Signal Processing Corp.	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed May 10, 2017 (File No. 333-217850)
3.120	By-laws of Porta Systems Corp. (now known as North Hills Signal Processing Corp.)	Incorporated by reference to TransDigm Inc's and TransDigm Group Incorporated's Form S-4, filed May 10, 2017 (File No. 333-217850)
3.121	Certificate of Incorporation, as amended, of Porta Systems Overseas Corp. (now known as North Hills Signal Processing Overseas Corp.)	Incorporated by reference to TransDigm Inc's and TransDigm Group Incorporated's Form S-4, filed May 10, 2017 (File No. 333-217850)
3.122	By-laws of Porta Systems Overseas Corp. (now known as North Hills Signal Processing Overseas Corp.)	Incorporated by reference to TransDigm Inc's and TransDigm Group Incorporated's Form S-4, filed May 10, 2017 (File No. 333-217850)
3.123	Certificate of Incorporation, filed April 28, 2015, of PX Acquisition Co. (now known as Pexco Aerospace, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 5, 2015 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.124	Certificate of Amendment of Certificate of Incorporation, filed May 14, 2015, of PX Acquisition Co. (now known as Pexco Aerospace, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 5, 2015 (File No. 001-32833)
3.125	By-laws of PX Acquisition Co. (now known as Pexco Aerospace, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 5, 2015 (File No. 001-32833)
3.126	Articles of Incorporation, filed October 3, 1956, of PneuDraulics, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 13, 2015 (File No. 001-32833)
3.127	Certificate of Amendment of Articles of Incorporation, filed December 9, 1970, of Articles of Incorporation of PneuDraulics, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 13, 2015 (File No. 001-32833)
3.128	Restated By-laws of PneuDraulics, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 13, 2015 (File No. 001-32833)
3.129	Limited Liability Company Certificate of Formation, filed May 30, 2007, of Schneller LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2012 (File No. 001-32833)
3.130	Amended and Restated Limited Liability Company Agreement, dated August 31, 2011, of Schneller LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2012 (File No. 001-32833)
3.131	Certificate of Incorporation, as amended, of Semco Instruments, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed September 7, 2010 (File No. 001-32833)
3.132	Certificate of Amendment of Certificate of Incorporation, filed October 17, 2012, of Semco Instruments, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 16, 2012 (File No. 001-32833)
3.133	Amended and Restated By-laws of Semco Instruments, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed September 7, 2010 (File No. 001-32833)
3.134	Certificate of Incorporation, filed September 16, 1994, of Am-Safe Commercial Products, Inc. (now known as Shield Restraint Systems, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.135	Certificate of Amendment of Certificate of Incorporation, filed May 19, 2005, of AmSafe Commercial Products, Inc. (now known as Shield Restraint Systems, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.136	Certificate of Amendment of Certificate of Incorporation, filed August 27, 2014, of AmSafe Commercial Products, Inc. (now known as Shield Restraint Systems, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 14, 2014 (File No. 001-32833)
3.137	By-laws of Am-Safe Commercial Products, Inc. (now known as Shield Restraint Systems, Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 9, 2012 (File No. 001-32833)
3.138	Certificate of Incorporation, filed December 22, 2004, of Skurka Aerospace Inc.	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed October 11, 2006 (File No. 333-137937)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.139	By-laws, as amended, of Skurka Aerospace Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.140	Certificate of Incorporation, filed August 22, 1986, of Tactair Fluid Controls, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.141	Certificate of Amendment, filed June 8, 1998, of Certificate of Incorporation of Tactair Fluid Controls, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.142	By-Laws, as amended, of Tactair Fluid Controls, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.143	Certificate of Formation, filed March 27, 2015, of Telair International LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 5, 2015 (File No. 001-32833)
3.144	Limited Liability Company Agreement of Telair International LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 5, 2015 (File No. 001-32833)
3.145	Certificate of Formation, filed February 23, 2015, of Telair US LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 5, 2015 (File No. 001-32833)
3.146	Limited Liability Company Agreement of Telair US LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 5, 2015 (File No. 001-32833)
3.147	Articles of Incorporation, filed August 6, 1999, of Texas Rotronics, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2011 (File No. 001-32833)
3.148	By-laws, as amended, of Texas Rotronics, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.149	Certificate of Formation, effective June 30, 2007, of Transicoil LLC	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed July 6, 2007 (File No. 333-144366)
3.150	Limited Liability Company Agreement of Transicoil LLC	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed July 6, 2007 (File No. 333-144366)
3.151	Certificate of Formation, filed June 13, 2013, of Whippany Actuation Systems, LLC	Incorporated by reference to Amendment No. 3 to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4/A, filed June 27, 2013 (File No. 333-186494)
3.152	Limited Liability Company Agreement of Whippany Actuation Systems, LLC	Incorporated by reference to Amendment No. 3 to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4/A, filed June 27, 2013 (File No. 333-186494)
3.153	Restated Certificate of Incorporation of Young & Franklin Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)

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Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.154	By-laws, as amended, of Young & Franklin Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
3.155	Certificate of Formation, filed May 30, 2013, of Beta Transformer Technology LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 15, 2016 (File No. 001-32833)
3.156	Amended and Restated By-laws of Kirkhill Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 4, 2018 (File No. 001-32833)
3.157	Certificate of Incorporation, as amended, of KH Acquisition I Co. (now known as Kirkhill Inc.)	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 4, 2018 (File No. 001-32833)
3.158	Certificate of Incorporation of TransDigm UK Holdings plc	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.159	Articles of Association of TransDigm UK Holdings plc	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.160	Amended and Restated Certificate of Incorporation of Extant Components Group Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.161	Bylaws of Extant Components Group Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.162	Certificate of Incorporation of Extant Components Group Intermediate, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.163	Bylaws of Extant Components Group Intermediate, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.164	Articles of Organization, as amended, of Symetrics Industries, LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.165	Amended and Restated Limited Liability Company Agreement of Symetrics Industries, LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.166	Articles of Organization, as amended, of Symetrics Technology Group, LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.167	Amended and Restated Limited Liability Company Agreement of Symetrics Technology Group, LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.168	Certificate of Incorporation, as amended, of TEAC Aerospace Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.169	Bylaws of TEAC Aerospace Holdings, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.170	Certificate of Incorporation, as amended, of TEAC Aerospace Technologies, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.171	Bylaws of TEAC Aerospace Technologies, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.172	Articles of Incorporation, filed January 2, 1992, of Skandia, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.173	Amended and Restated By-laws of Skandia, Inc.	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
3.174	Fifth Amended and Restated Certificate of Incorporation of Esterline Technologies Corporation	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.175	Second Amended and Restated By-laws of Esterline Technologies Corporation	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.176	Certificate of Formation of Esterline International Company	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.177	Amended and Restated Bylaws of Esterline International Company	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4 filed April 2, 2019 (File No. 333-228336)
3.178	Certificate of Incorporation, as amended, of Leach Holding Corporation	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.179	Amended and Restated Bylaws of Leach Holding Corporation	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.180	Certificate of Incorporation, as amended, of Leach International Corporation	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.181	Amended and Restated Bylaws of Leach International Corporation	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.182	Certificate of Incorporation of Leach Technology Group, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.183	Amended and Restated Bylaws of Leach Technology Group, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.184	Restated Articles of Incorporation of TA Aerospace Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.185	Amended and Restated Bylaws of TA Aerospace Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.186	Certificate of Formation of CMC Electronics Aurora LLC	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.187	Amended and Restated Limited Liability Company Agreement of CMC Electronics Aurora LLC	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.188	Certificate of Formation of Esterline Europe Company LLC	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.189	Amended and Restated Limited Liability Company Agreement of Esterline Europe Company LLC	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.190	Certificate of Formation, as amended, of Esterline Georgia US LLC (now known as TREALITY SVS LLC)	Filed Herewith
3.191	Amended and Restated Limited Liability Company Agreement of TREALITY SVS LLC	Filed Herewith
3.192	Amended and Restated Certificate of Formation, as amended, of Esterline Federal LLC (now known as ScioTeq LLC)	Filed Herewith
3.193	Amended and Restated Limited Liability Company Agreement of ScioTeq LLC	Filed Herewith
3.194	Certificate of Incorporation, as amended, of Angus Electronics Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.195	Amended and Restated Bylaws of Angus Electronics Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.196	Amended and Restated Articles of Incorporation of Avista, Incorporated	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.197	Amended and Restated Bylaws of Avista, Incorporated	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.198	Certificate of Incorporation, as amended, of Esterline Sensors Services Americas, Inc. (now known as Auxitrol Weston USA, Inc.)	Incorporated by reference to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed August 7, 2019 (File No. 333-233103)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.199	Amended and Restated Bylaws of Esterline Sensors Services Americas, Inc. (now known as Auxitrol Weston USA, Inc.)	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.200	Certificate of Formation of Esterline Technologies SGIP LLC	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.201	Limited Liability Company Agreement of Esterline Technologies SGIP LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 8, 2019 (File No. 001-32833)
3.202	Certificate of Incorporation of Hytek Finishes Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.203	Amended and Restated Bylaws of Hytek Finishes Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.204	Restated Articles of Incorporation of Janco Corporation	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.205	Amended and Restated Bylaws of Janco Corporation	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.206	Certificate of Incorporation, as amended, of Mason Electric Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.207	Amended and Restated Bylaws of Mason Electric Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.208	Amended and Restated Articles of Incorporation, as amended, of NMC Group, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.209	Amended and Restated Bylaws of NMC Group, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.210	Certificate of Incorporation, as amended, of Norwich Aero Products, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.211	Amended and Restated By-laws of Norwich Aero Products, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.212	Certificate of Incorporation, as amended, of Palomar Products, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.213	Amended and Restated Bylaws of Palomar Products, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
3.214	Certificate of Formation of 17111 Waterview Pkwy LLC	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.215	Limited Liability Company Agreement of 17111 Waterview Pkwy LLC	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed May 8, 2019 (File No. 001-32833)
3.216	Certificate of Incorporation of Korry Electronics Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.217	Amended and Restated Bylaws of Korry Electronics Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.218	Certificate of Incorporation of Armtec Defense Products Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.219	Amended and Restated Bylaws of Armtec Defense Products Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.220	Certificate of Incorporation of Armtec Countermeasures Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.221	Amended and Restated Bylaws of Armtec Countermeasures Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.222	Certificate of Incorporation, as amended, of Armtec Countermeasures TNO Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.223	Amended and Restated Bylaws of Armtec Countermeasures TNO Co.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.224	Certificate of Incorporation of Racal Acoustics, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.225	Amended and Restated Bylaws of Racal Acoustics, Inc.	Incorporated by reference to Amendment No. 1 to TransDigm UK Holdings plc's, TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed April 2, 2019 (File No. 333-228336)
3.226	Certificate of Incorporation of TDG ESL Holdings Inc.	Filed Herewith
3.227	By-laws of TDG ESL Holdings Inc.	Filed Herewith
4.1	Form of Stock Certificate	Incorporated by reference to Amendment No. 3 to TransDigm Group Incorporated's Form S-1 filed March 13, 2006 (File No. 333-130483)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
4.2	Indenture, dated as of June 4, 2014, among TransDigm Inc., TransDigm Group Incorporated, the guarantors listed on the signature pages thereto and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to TransDigm Inc.'s 6.00% Senior Subordinated Notes due 2022.	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed June 6, 2014 (File No. 001-32833)
4.3	Indenture, dated as of June 4, 2014, among TransDigm Inc., TransDigm Group Incorporated, the guarantors listed on the signature pages thereto and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to TransDigm Inc.'s 6.50% Senior Subordinated Notes due 2024	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed June 6, 2014 (File No. 001-32833)
4.4	Indenture, dated as of May 14, 2015, among TransDigm Inc., TransDigm Group Incorporated, the guarantors listed on the signature pages thereto and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to TransDigm Inc.'s 6.50% Senior Subordinated Notes due 2025	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed May 19, 2015 (File No. 001-32833)
4.5	Indenture, dated as of June 9, 2016, among TransDigm Inc., as issuer, TransDigm Group Incorporated, as a guarantor, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to TransDigm Inc.'s 6.375% Senior Subordinated Notes due 2026	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed June 14, 2016 (File No. 001-32833)
4.6	Indenture, dated as of May 8, 2018, among TransDigm UK Holdings plc, as issuer, TransDigm Group Incorporated and TransDigm Inc., as guarantors, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to TransDigm UK Holdings plc's 6.875% Senior Subordinated Notes due 2026	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed May 14, 2018 (File No. 001-32833)
4.7	Indenture, dated as of February 13, 2019, among TransDigm Inc., as issuer, TransDigm Group Incorporated, as a guarantor, the subsidiary guarantors party thereto, The Bank of New York Mellon Trust Company, N.A., as trustee and US collateral agent, and The Bank of New York Mellon, as UK collateral agent, relating to TransDigm Inc.'s 6.25% Senior Secured Notes due 2026	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed February 13, 2019 (File No. 001-32833)
4.8	Indenture, dated as of February 13, 2019, among TransDigm Inc., as issuer, TransDigm Group Incorporated, as a guarantor, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to TransDigm Inc.'s 7.50% Senior Subordinated Notes due 2027	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed February 13, 2019 (File No. 001-32833)
4.9	Indenture, dated as of November 13, 2019, among TransDigm Inc., as issuer, TransDigm Group Incorporated, as a guarantor, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to TransDigm Inc.'s 5.50% Senior Subordinated Notes due 2027	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed November 13, 2019 (File No. 001-32833)
4.10	Form of Supplemental Indenture to Add New Guarantors	Filed Herewith
4.11	Form of TransDigm Inc.'s 6.00% Senior Subordinated Notes due 2022	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed June 6, 2014 (File No. 001-32833)
4.12	Form of TransDigm Inc.'s 6.50% Senior Subordinated Notes due 2024	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed June 6, 2014 (File No. 001-32833)
4.13	Form of TransDigm Inc.'s 6.50% Senior Subordinated Notes due 2025	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed May 19, 2015 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
4.14	Form of TransDigm Inc.’s 6.375% Senior Subordinated Notes due 2026	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed June 14, 2016 (File No. 001-32833)
4.15	Form of TransDigm UK Holdings plc’s 6.875% Senior Subordinated Notes due 2026	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed May 14, 2018 (File No. 001-32833)
4.16	Form of 6.25% Senior Secured Notes due 2026	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed February 13, 2019 (File No. 001-32833)
4.17	Form of 7.50% Senior Subordinated Notes due 2027	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed February 13, 2019 (File No. 001-32833)
4.18	Form of 5.50% Senior Subordinated Notes due 2027	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed November 13, 2019 (File No. 001-32833)
4.19	Description of Securities	Filed Herewith
4.20	Registration Rights Agreement, dated as of November 13, 2019, among TransDigm Inc., as issuer, TransDigm Group Incorporated, as a guarantor, the subsidiary guarantors party thereto and Morgan Stanley & Co. LLC, as representative for the initial purchasers listed therein	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed November 13, 2019 (File No. 001-32833)
10.1	Fifth Amended and Restated Employment Agreement, dated April 26, 2018, between TransDigm Group Incorporated and W. Nicholas Howley*	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed April 30, 2018 (File No. 001-32833)
10.2	Employment Agreement, dated July 27, 2018, between TransDigm Group Incorporated and Michael Lisman*	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed July 30, 2018 (File No. 001-32833)
10.3	Second Amended and Restated Employment Agreement, dated April 26, 2018, between TransDigm Group Incorporated and Kevin Stein*	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed April 30, 2018 (File No. 001-32833)
10.4	Third Amended and Restated Employment Agreement, dated November 6, 2018, between TransDigm Group Incorporated and Robert Henderson*	Incorporated by reference to TransDigm Group Incorporated’s Form 10-K, filed November 9, 2018 (File No. 001-32833)
10.5	Employment Agreement, dated October 28, 2013, between TransDigm Group Incorporated and Jorge Valladares*	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed October 29, 2013 (File No. 001-32833)
10.6	Employment Agreement, Dated February 24, 2011, between TransDigm Group Incorporated and Bernt Iversen*	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed February 25, 2011 (File No. 001-32833)
10.7	First Amendment to Employment Agreement, dated April 20, 2012, between TransDigm Group Incorporated and Bernt Iversen*	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed April 24, 2012 (File No. 001-32833)
10.8	Form of Amendment to Employment Agreement between TransDigm Group Incorporated and Bernt Iversen*	Incorporated by reference to TransDigm Group Incorporated’s Form 8-K, filed October 25, 2012 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
10.9	Form of Amendment to Employment Agreement, dated October 2015, between TransDigm Group Incorporated and each of Bernt Iversen, James Skulina, and Jorge Valladares*	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed October 27, 2015 (File No. 001-32833)
10.10	Fourth Amendment to Employment Agreement, dated November 11, 2016, between TransDigm Group Incorporated and Bernt Iversen*	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed November 15, 2016 (File No. 001-32833)
10.11	Second Amendment to Employment Agreement, dated July 30, 2018, between TransDigm Group Incorporated and Jorge Valladares*	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed August 3, 2018 (File No. 001-32833)
10.12	TransDigm Group Incorporated Fourth Amended and Restated 2003 Stock Option Plan*	Incorporated by reference to Amendment No. 1 to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed November 7, 2006 (File No. 333-137937)
10.13	Amendment No. 1 to the TransDigm Group Incorporated Fourth Amended and Restated 2003 Stock Option Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 21, 2007 (File No. 001-32833)
10.14	Amendment No. 2 to the TransDigm Group Incorporated Fourth Amended and Restated 2003 Stock Option Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 7, 2008 (File No. 001-32833)
10.15	Amendment No. 3 to the TransDigm Group Incorporated Fourth Amended and Restated 2003 Stock Option Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed April 28, 2009 (File No. 001-32833)
10.16	TransDigm Group Incorporated 2006 Stock Incentive Plan*	Incorporated by reference to Amendment No. 3 to TransDigm Group Incorporated's Form S-1, filed March 13, 2006 (File No. 333-130483)
10.17	Amendment No. 1, dated October 20, 2006, to the TransDigm Group Incorporated 2006 Stock Incentive Plan*	Incorporated by reference to Amendment No. 1 to TransDigm Inc.'s and TransDigm Group Incorporated's Form S-4, filed November 7, 2006 (File No. 333-137937)
10.18	Second Amendment to TransDigm Group Incorporated 2006 Stock Incentive Plan, dated April 25, 2008*	Incorporated by reference to TransDigm Group Incorporated's Schedule 14A, filed June 6, 2008 (File No. 001-32833)
10.19	Amended and Restated TransDigm Group Incorporated 2014 Stock Option Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 7, 2019 (File No. 001-32833)
10.20	TransDigm Group Incorporated 2019 Stock Option Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed October 4, 2019 (File No. 001-32833)
10.21	TransDigm Group Incorporated 2016 Director Share Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 10, 2016 (File No. 001-32833)
10.22	Form of Option Agreement for options granted in fiscal 2015*	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed January 30, 2015 (File No. 001-32833)
10.23	Form of Option Agreement for options granted in fiscal 2016*	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 10, 2016 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
10.24	Form of Stock Option Agreement for options awarded in fiscal 2017*	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 8, 2017 (File No. 001-32833)
10.25	Form of Stock Option Agreement for options awarded in fiscal 2018*	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 9, 2018 (File No. 001-32833)
10.26	Form of Stock Option Agreement for options awarded in fiscal 2019*	Filed Herewith
10.27	Fourth Amended and Restated TransDigm Group Incorporated 2003 Stock Option Plan Dividend Equivalent Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed August 2, 2013 (File No. 001-32833)
10.28	Third Amended and Restated TransDigm Group Incorporated 2006 Stock Incentive Plan Dividend Equivalent Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed August 2, 2013 (File No. 001-32833)
10.29	TransDigm Group Incorporated 2014 Stock Option Plan Dividend Equivalent Plan*	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed October 28, 2014 (File No. 001-32833)
10.30	Amendment and Restatement Agreement, and Second Amendment and Restated Credit Agreement, dated as of June 4, 2014, among TransDigm Inc., TransDigm Group Incorporated, the subsidiaries of TransDigm Inc. from time to time party thereto, the lenders party thereto, as lenders, and Credit Suisse AG, as administrative agent	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed June 6, 2014 (File No. 001-32833)
10.31	Incremental Assumption and Refinancing Facility Agreement, dated as of May 14, 2015, among TransDigm Inc., TransDigm Group Incorporated, the subsidiary guarantors party thereto, Credit Suisse AG, as administrative agent and collateral agent, and the other agents and lenders named therein	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed May 19, 2015 (File No. 001-32833)
10.32	Loan Modification Agreement, dated as of May 20, 2015, among TransDigm Inc., TransDigm Group Incorporated, the subsidiary guarantors party thereto, Credit Suisse AG, as administrative agent and collateral agent, and the other agents and lenders party thereto	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed May 27, 2015 (File No. 001-32833)
10.33	Incremental Revolving Credit Assumption and Refinancing Facility Agreement, dated as of May 20, 2015, among TransDigm Inc., TransDigm Group Incorporated, the subsidiary guarantors party thereto, Credit Suisse AG, as administrative agent and collateral agent and the other agents and lenders party thereto	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed May 27, 2015 (File No. 001-32833)
10.34	Incremental Term Loan Assumption Agreement dated October 14, 2016 among TransDigm Inc., TransDigm Group Incorporated, the subsidiaries of TransDigm Inc. party thereto, the lenders party thereto and Credit Suisse AG, as administrative and collateral agent	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed October 14, 2016 (File No. 001-32833)
10.35	Amendment No. 2 to the Second Amended and Restated Credit Agreement, dated as of March 6, 2017, among TransDigm Inc., as borrower, TransDigm Group Incorporated, as guarantor, the subsidiary guarantors party thereto, Credit Suisse AG, as administrative agent and collateral agent, and the other agents and lenders named therein	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed March 8, 2017 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
10.36	Amendment No. 3 to the Second Amended and Restated Credit Agreement, dated as of August 22, 2017, among TransDigm Inc., as borrower, TransDigm Group Incorporated, as guarantor, the subsidiary guarantors party thereto, Credit Suisse AG, as administrative agent and collateral agent, and the other agents and lenders named therein	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed August 24, 2017 (File No. 001-32833)
10.37	Amendment No.4 to the Second Amended and Restated Credit Agreement, dated as of November 30, 2017, among TransDigm Inc., as borrower, TransDigm Group Incorporated, as guarantor, the subsidiary guarantors party thereto, Credit Suisse AG, as administrative agent and collateral agent, and the other agents and lenders named therein	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed December 6, 2017 (File No. 001-32833)
10.38	Refinancing Facility Agreement to the Second Amended and Restated Credit Agreement, dated as of February 22, 2018, among TransDigm Inc., as borrower, TransDigm Group Incorporated, as guarantor, the subsidiary guarantors party thereto, Credit Suisse AG, as administrative agent and collateral agent, and the other agents and lenders named therein	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed February 22, 2018 (File No. 001-32833)
10.39	Amendment No. 5, Incremental Assumption Agreement and Refinancing Facility Agreement, dated as of May 30, 2018, relating to the Second Amended and Restated Credit Agreement, dated as of June 4, 2014, among TransDigm Inc., TransDigm Group Incorporated, each subsidiary of TransDigm Inc. party thereto, the lenders party thereto, and Credit Suisse AG, as administrative agent and collateral agent for the lenders	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed May 31, 2018 (File No. 001-32833)
10.40	Amendment No. 6 and Incremental Revolving Credit Assumption Agreement, dated as of March 14, 2019, to the Second Amended and Restated Credit Agreement, dated as of June 4, 2014, among TransDigm Inc., TransDigm Group Incorporated, each subsidiary of TransDigm Inc. party thereto, the lenders party thereto, and Credit Suisse AG, as administrative agent and collateral agent for the lenders.	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed March 14, 2019 (File No. 001-32833)
10.41	Guarantee and Collateral Agreement, dated as of June 23, 2006, as amended and restated as of December 6, 2010, as further amended and restated as of February 14, 2011 and February 28, 2013, among TransDigm Inc., TransDigm Group Incorporated, the subsidiaries of TransDigm Inc. named therein and Credit Suisse AG as administrative agent and collateral agent	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed March 6, 2013 (File No. 001-32833)
10.42	Receivables Purchase Agreement, dated October 21, 2013, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association as a Purchaser and a Purchaser Agent, the various other Purchasers and Purchaser Agents from time to time party thereto, and PNC National Association as Administrator	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed February 5, 2014 (File No. 001-32833)
10.43	First Amendment to the Receivables Purchase Agreement, dated March 25, 2014, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association as a Purchaser, Purchaser Agent for its Purchaser Group and as Administrator	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 13, 2015 (File No. 001-32833)

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
10.44	Second Amendment to the Receivables Purchase Agreement, dated August 8, 2014, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association, as a Committed Purchaser, as a Purchaser Agent for its Purchaser Group and Administrator, and Credit Agricole Corporate and Investment Bank, as a Committed Purchaser and as a Purchase Agent for its Purchaser Group	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 13, 2015 (File No. 001-32833)
10.45	Third Amendment to the Receivables Purchase Agreement, dated March 20, 2015, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association, as a Committed Purchaser, as a Purchaser Agent for its Purchaser Group and Administrator, Atlantic Asset Securitization LLC, as a Conduit Purchaser, and Credit Agricole Corporate and Investment Bank, as a Committed Purchaser and as a Purchase Agent for its and Atlantic's Purchaser Group	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 13, 2015 (File No. 001-32833)
10.46	Fourth Amendment to the Receivables Purchase Agreement dated as of August 4, 2015, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association, as a Committed Purchaser, as a Purchaser Agent for its Purchaser Group and Administrator, Atlantic Asset Securitization LLC, as a Conduit Purchaser, and Credit Agricole Corporate and Investment Bank, as a Committed Purchaser and as a Purchaser Agent for its and Atlantic's Purchaser Group	Incorporated by reference to TransDigm Group Incorporated's Form 8-K, filed August 7, 2015 (File No. 001-32833)
10.47	Ninth Amendment to the Receivables Purchase Agreement dated as of August 1, 2017, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association, as a Committed Purchaser, as Purchaser Agent for its Purchaser Group and as Administrator, Atlantic Asset Securitization LLC, as a Conduit Purchaser, Credit Agricole Corporate and Investment Bank, as a Committed Purchaser and as a Purchaser Agent for its and Atlantic's Purchaser Group, and Fifth Third Bank, as a Committed Purchaser and as Purchaser Agent for its Purchaser Group	Incorporated by reference to TransDigm Group Incorporated's Form 10-K, filed November 13, 2017 (File No. 001-32833)
10.48	Tenth Amendment to the Receivables Purchase Agreement dated as of July 31, 2018, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association, as a Committed Purchaser, as Purchaser Agent for its Purchaser Group and as Administrator, Atlantic Asset Securitization LLC, as a Conduit Purchaser, Credit Agricole Corporate and Investment Bank, as a Committed Purchaser and as a Purchaser Agent for its and Atlantic's Purchaser Group, and Fifth Third Bank, as a Committed Purchaser and as Purchaser Agent for its Purchaser Group	Incorporated by reference to TransDigm Group Incorporated's Form 10-Q, filed August 8, 2018 (File No. 001-32833)
10.49	Eleventh Amendment to the Receivables Purchase Agreement dated as of July 30, 2019, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association, as a Committed Purchaser, as Purchaser Agent for its Purchaser Group and as Administrator, Atlantic Asset Securitization LLC, as a Conduit Purchaser, Credit Agricole Corporate and Investment Bank, as a Committed Purchaser and as a Purchaser Agent for its and Atlantic's Purchaser Group, and Fifth Third Bank, as a Committed Purchaser and as Purchaser Agent for its Purchaser Group	Filed Herewith

Exhibit No.	Description	Filed Herewith or Incorporated by Reference From
21.1	Subsidiaries of TransDigm Group Incorporated	Filed Herewith
23.1	Consent of Independent Registered Public Accounting Firm	Filed Herewith
31.1	Certification by Principal Executive Officer of TransDigm Group Incorporated pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Filed Herewith
31.2	Certification by Principal Financial Officer of TransDigm Group Incorporated pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Filed Herewith
32.1	Certification by Principal Executive Officer of TransDigm Group Incorporated pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	Filed Herewith
32.2	Certification by Principal Financial Officer of TransDigm Group Incorporated pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	Filed Herewith
101	Financial Statements and Notes to Consolidated Financial Statements formatted in Inline XBRL.	Filed Herewith
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)	Filed Herewith

* Indicates management contract or compensatory plan contract or arrangement.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized on November 19, 2019.

TRANSDIGM GROUP INCORPORATED

By:	/s/ Michael Lisman
Name:	**Michael Lisman**
Title:	**Chief Financial 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 as of the dates indicated.

Signature	Title	Date
/s/ Kevin Stein **Kevin Stein**	President, Chief Executive Officer and Director (Principal Executive Officer)	November 19, 2019
/s/ Michael Lisman **Michael Lisman**	Chief Financial Officer (Principal Financial Officer)	November 19, 2019
/s/ Sarah Wynne **Sarah Wynne**	Chief Accounting Officer (Principal Accounting Officer)	November 19, 2019
/s/ W. Nicholas Howley **W. Nicholas Howley**	Executive Chairman	November 19, 2019
/s/ David Barr **David Barr**	Director	November 19, 2019
/s/ William Dries **William Dries**	Director	November 19, 2019
/s/ Mervin Dunn **Mervin Dunn**	Director	November 19, 2019
/s/ Michael Graff **Michael Graff**	Director	November 19, 2019
/s/ Sean P. Hennessy **Sean P. Hennessy**	Director	November 19, 2019
/s/ Raymond F. Laubenthal **Raymond F. Laubenthal**	Director	November 19, 2019
/s/ Gary E. McCullough **Gary E. McCullough**	Director	November 19, 2019
/s/ Michele Santana **Michele Santana**	Director	November 19, 2019
/s/ Robert J. Small **Robert J. Small**	Director	November 19, 2019
/s/ John Staer **John Staer**	Director	November 19, 2019

TRANSDIGM GROUP INCORPORATED AND SUBSIDIARIES
ANNUAL REPORT ON FORM 10-K:
FISCAL YEAR ENDED SEPTEMBER 30, 2019
ITEM 8 AND ITEM 15(a) (1)
FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA
INDEX

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders of
TransDigm Group

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of TransDigm Group Incorporated ("the Company") as of September 30, 2019 and 2018, the related consolidated statements of income, comprehensive income, changes in stockholders' deficit, and cash flows for each of the three years in the period ended September 30, 2019, and the related notes and financial statement schedule listed in the Index at Item 15(a) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company at September 30, 2019 and 2018, and the consolidated results of its operations and its cash flows for each of the three years in the period ended September 30, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of September 30, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated November 19, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

Critical Audit Matter

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

	Valuation of intangible assets and loss contract reserves for Esterline acquisition
Description of the Matter	As described in Note 2 to the consolidated financial statements, during 2019, the Company completed the acquisition of all the outstanding stock of Esterline Technologies Corporation (“Esterline”) for a total purchase price of approximately $3,924 million, net of cash acquired. The acquisition was accounted for under the acquisition method of accounting whereby the total purchase price was allocated to tangible and intangible assets acquired and liabilities assumed based on the respective estimated fair values. Management’s accounting for the Company’s 2019 acquisition of Esterline was significant to our audit because the amounts are material to the consolidated financial statements and the related accounting for this transaction involved a high degree of subjectivity in determination of the fair value of the $1,310 million acquired intangible assets, and $268 million loss contract reserves. The acquired intangible assets principally consisted of trademarks and tradenames, technology, order backlog, and customer relationships. The loss contract reserves related to acquired contracts with customers that were determined to have below market terms. The high degree of subjectivity was primarily due to the sensitivity of the respective fair values to underlying assumptions about the future performance of the acquired business. The Company used a discounted cash flow model to measure the intangible assets and loss contract reserves. The significant assumptions used to estimate the value of the intangible assets included discount rates and certain assumptions that form the basis of the forecasted results (e.g., revenue growth rates, customer attrition rates, and royalty rates). The significant assumptions used to estimate the value of the loss contract reserves included discount rates, forecasted quantities of the products to be sold under the long-term contracts and market prices for respective products. These significant assumptions are forward looking and could be affected by future economic and market conditions.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company’s accounting for the recognition and measurement of the intangible assets and loss contract reserves. This included testing controls over management’s review of the fair value methodology and significant assumptions used to develop the estimates of fair value for those intangible assets and loss contract reserves. To test the estimated fair values of the acquired intangible assets and loss contract reserves, our audit procedures included, among others, assessing the appropriateness of the valuation methodology and testing the significant assumptions discussed above and the underlying data used by the Company. We involved our valuation specialists in assessing the fair value methodology applied and evaluating certain significant assumptions. When evaluating the significant assumptions used to determine the fair value of the acquired intangible assets, we compared the assumptions to the past performance of Esterline, peer companies within the industry, similar acquisitions made by the Company, market data and expected industry trends. When evaluating the significant assumptions used to value the loss contract reserves, we reviewed market data, historical sales and backlog of products sold under the respective contracts and assessed reasonableness of market prices of such products through review of sales of such products or similar products to other customers. Furthermore, we assessed the appropriateness of the disclosures in the consolidated financial statements regarding the acquisition.

/s/ Ernst & Young LLP
We have served as the Company’s auditor since 2004.

Cleveland, Ohio
November 19, 2019

TRANSDIGM GROUP INCORPORATED
CONSOLIDATED BALANCE SHEETS
AS OF SEPTEMBER 30, 2019 AND 2018
(Amounts in thousands, except share amounts)

	2019	2018
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 1,467,486	$ 2,073,017
Trade accounts receivable—Net	1,067,603	704,310
Inventories—Net	1,232,649	805,292
Assets held-for-sale	962,129	—
Prepaid expenses and other	135,380	74,668
Total current assets	4,865,247	3,657,287
PROPERTY, PLANT AND EQUIPMENT—NET	756,757	388,333
GOODWILL	7,820,103	6,223,290
OTHER INTANGIBLE ASSETS—NET	2,743,820	1,788,404
OTHER	68,804	140,153
TOTAL ASSETS	$ 16,254,731	$ 12,197,467
LIABILITIES AND STOCKHOLDERS' DEFICIT		
CURRENT LIABILITIES:		
Current portion of long-term debt	$ 80,213	$ 75,817
Short-term borrowings—trade receivable securitization facility	349,519	299,519
Accounts payable	276,590	173,603
Accrued liabilities	675,695	351,443
Liabilities held-for-sale	156,739	—
Total current liabilities	1,538,756	900,382
LONG-TERM DEBT	16,469,221	12,501,946
DEFERRED INCOME TAXES	440,817	399,496
OTHER NON-CURRENT LIABILITIES	691,020	204,114
Total liabilities	19,139,814	14,005,938
TD GROUP STOCKHOLDERS' DEFICIT:		
Common stock—$.01 par value; authorized 224,400,000 shares; issued 57,623,311 and 56,895,686 shares at September 30, 2019 and 2018	576	569
Additional paid-in capital	1,378,760	1,208,742
Accumulated deficit	(3,119,956)	(2,246,578)
Accumulated other comprehensive (loss) income	(378,981)	4,100
Treasury stock, at cost; 4,161,326 shares at September 30, 2019 and 2018	(775,304)	(775,304)
Total TD Group stockholders' deficit	(2,894,905)	(1,808,471)
NONCONTROLLING INTERESTS	9,822	—
Total stockholders' deficit	(2,885,083)	(1,808,471)
TOTAL LIABILITIES AND STOCKHOLDERS' DEFICIT	$ 16,254,731	$ 12,197,467

See Notes to Consolidated Financial Statements.

TRANSDIGM GROUP INCORPORATED
CONSOLIDATED STATEMENTS OF INCOME
(Amounts in thousands, except per share amounts)

	Fiscal Years Ended September 30,		
	2019	2018	2017
NET SALES	$ 5,223,203	$ 3,811,126	$ 3,504,286
COST OF SALES	2,413,932	1,633,616	1,519,659
GROSS PROFIT	2,809,271	2,177,510	1,984,627
SELLING AND ADMINISTRATIVE EXPENSES	747,773	449,676	412,555
AMORTIZATION OF INTANGIBLE ASSETS	134,952	72,454	89,226
INCOME FROM OPERATIONS	1,926,546	1,655,380	1,482,846
INTEREST EXPENSE—Net	859,753	663,008	602,589
REFINANCING COSTS	3,013	6,396	39,807
OTHER EXPENSE—Net	915	419	3,020
INCOME FROM CONTINUING OPERATIONS BEFORE INCOME TAXES	1,062,865	985,557	837,430
INCOME TAX PROVISION	221,986	24,021	208,889
INCOME FROM CONTINUING OPERATIONS INCLUDING NONCONTROLLING INTERESTS	840,879	961,536	628,541
INCOME (LOSS) FROM DISCONTINUED OPERATIONS, NET OF TAX	50,432	(4,474)	(31,654)
NET INCOME INCLUDING NONCONTROLLING INTERESTS	891,311	957,062	596,887
NET INCOME ATTRIBUTABLE TO NONCONTROLLING INTERESTS	(1,541)	—	—
NET INCOME ATTRIBUTABLE TO TD GROUP	$ 889,770	$ 957,062	$ 596,887
NET INCOME APPLICABLE TO TD GROUP COMMON STOCK	$ 778,749	$ 900,914	$ 437,630
Net earnings per share attributable to TD Group stockholders:			
Net earnings per share from continuing operations—basic and diluted	$ 12.94	$ 16.28	$ 8.45
Net earnings (loss) per share from discontinued operations—basic and diluted	0.90	(0.08)	(0.57)
Net earnings per share	$ 13.84	$ 16.20	$ 7.88
Cash dividends paid per common share	$ 30.00	$ —	$ 46.00
Weighted-average shares outstanding:			
Basic and diluted	56,265	55,597	55,530

See Notes to Consolidated Financial Statements.

TRANSDIGM GROUP INCORPORATED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Amounts in thousands)

	Fiscal Years Ended September 30,		
	2019	2018	2017
Net income including noncontrolling interests	$ 891,311	957,062	596,887
Net income attributable to noncontrolling interests	(1,541)	—	—
Net income attributable to TD Group	889,770	957,062	596,887
Other comprehensive (loss) income, net of tax:			
Foreign currency translation	(114,856)	(10,253)	22,241
Unrealized (loss) gain on derivatives	(239,221)	93,860	34,471
Pensions and other postretirement benefits	(29,004)	5,636	7,932
Other comprehensive (loss) income, net of tax, attributable to TD Group	(383,081)	89,243	64,644
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO TD GROUP	$ 506,689	$ 1,046,305	$ 661,531

See Notes to Consolidated Financial Statements.

TRANSDIGM GROUP INCORPORATED
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' DEFICIT
(Amounts in thousands, except share and per share amounts)

	TD Group Stockholders								
	Common Stock					Treasury Stock			
	Number of Shares	Common Stock	Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive (Loss) Income	Number of Shares	Value	Non-controlling Interests	Total
BALANCE—September 30, 2016	55,767,767	$ 558	$ 1,028,972	$ (1,146,963)	$ (149,787)	(2,433,035)	$ (384,270)	$ —	$ (651,490)
Accrued unvested dividend equivalent payments and other	—	—	—	(214,849)	—	—	—	—	(214,849)
Compensation expense recognized for employee stock options and restricted stock	—	—	44,931	—	—	—	—	—	44,931
Exercise of employee stock options and restricted stock activity, net	324,908	3	21,177	—	—	(2,548)	(630)	—	20,550
Treasury stock purchased	—	—	—	—	—	(1,723,624)	(389,821)	—	(389,821)
Common stock issued	984	—	239	—	—	—	—	—	239
Net income	—	—	—	596,887	—	—	—	—	596,887
Unrealized gain on derivatives, net of tax	—	—	—	—	34,471	—	—	—	34,471
Foreign currency translation adjustments, net of tax	—	—	—	—	22,241	—	—	—	22,241
Pensions and other postretirement benefits adjustments, net of tax	—	—	—	—	7,932	—	—	—	7,932
BALANCE—September 30, 2017	56,093,659	561	1,095,319	(3,187,220)	(85,143)	(4,159,207)	(774,721)	—	(2,951,204)
Accrued unvested dividend equivalent payments and other	—	—	—	(16,420)	—	—	—	—	(16,420)
Compensation expense recognized for employee stock options and restricted stock	—	—	55,481	—	—	—	—	—	55,481
Exercise of employee stock options and restricted stock activity, net	800,955	8	57,583	—	—	(2,119)	(583)	—	57,008
Common stock issued	1,072	—	359	—	—	—	—	—	359
Net income	—	—	—	957,062	—	—	—	—	957,062
Unrealized gain on derivatives, net of tax	—	—	—	—	93,860	—	—	—	93,860
Foreign currency translation adjustments, net of tax	—	—	—	—	(10,253)	—	—	—	(10,253)
Pensions and other postretirement benefits adjustments, net of tax	—	—	—	—	5,636	—	—	—	5,636
BALANCE—September 30, 2018	56,895,686	569	1,208,742	(2,246,578)	4,100	(4,161,326)	(775,304)	—	(1,808,471)
Cumulative effect of ASC 606, adopted October 1, 2018	—	—	—	3,284	—	—	—	—	3,284
Cumulative effect of ASU 2016-16, adopted October 1, 2018	—	—	—	(353)	—	—	—	—	(353)
Cumulative effect of ASU 2018-02, adopted October 1, 2018	—	—	—	2,199	(2,199)	—	—	—	—
Noncontrolling interests assumed related to acquisitions	—	—	—	—	—	—	—	8,281	8,281
Dividends paid	—	—	—	(1,687,910)	—	—	—	—	(1,687,910)
Accrued unvested dividend equivalent payments and other	—	—	—	(80,368)	—	—	—	—	(80,368)
Compensation expense recognized for employee stock options	—	—	87,727	—	—	—	—	—	87,727
Exercise of employee stock options	726,750	7	81,875	—	—	—	—	—	81,882
Common stock issued	875	—	416	—	—	—	—	—	416
Net income	—	—	—	889,770	—	—	—	1,541	891,311
Unrealized (loss) gain on derivatives, net of tax	—	—	—	—	(237,022)	—	—	—	(237,022)
Foreign currency translation adjustments, net of tax	—	—	—	—	(114,856)	—	—	—	(114,856)
Pensions and other postretirement benefits adjustments, net of tax	—	—	—	—	(29,004)	—	—	—	(29,004)
BALANCE—September 30, 2019	57,623,311	$ 576	$ 1,378,760	$ (3,119,956)	$ (378,981)	(4,161,326)	$ (775,304)	$ 9,822	$ (2,885,083)

See Notes to Consolidated Financial Statements.

TRANSDIGM GROUP INCORPORATED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands)

	Fiscal Years Ended September 30,		
	2019	**2018**	**2017**
OPERATING ACTIVITIES:			
Net income including noncontrolling interests	$ 891,311	$ 957,062	$ 596,887
Net (income) loss from discontinued operations	(50,432)	4,474	31,654
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	89,689	56,397	50,937
Amortization of intangible assets	136,011	73,447	90,088
Amortization of debt issuance costs, original issue discount and premium	28,034	22,128	21,106
Amortization of inventory step-up	76,927	7,080	20,621
Amortization of loss contract reserves	(38,347)	(10,570)	(3,477)
Refinancing costs	3,013	6,396	39,807
Non-cash stock compensation	93,362	58,481	45,524
Deferred income taxes	(349)	(151,640)	(918)
Changes in assets/liabilities, net of effects from acquisitions and sales of businesses:			
Trade accounts receivable	(82,268)	(43,811)	(54,669)
Inventories	(35,712)	(17,888)	5,127
Income taxes receivable/payable	(2,667)	36,161	18,219
Other assets	(26,767)	(4,813)	(10,564)
Accounts payable	(1,632)	18,075	(10,354)
Accrued interest	(3,948)	14,368	(958)
Accrued and other liabilities	(60,753)	(3,174)	(50,297)
Net cash provided by operating activities	1,015,472	1,022,173	788,733
INVESTING ACTIVITIES:			
Capital expenditures, net of disposals	(101,591)	(73,341)	(71,013)
Payments made in connection with acquisitions	(3,976,155)	(667,619)	(215,990)
Proceeds in connection with the sale of discontinued operations	188,766	57,383	—
Net cash used in investing activities	(3,888,980)	(683,577)	(287,003)
FINANCING ACTIVITIES:			
Proceeds from exercise of stock options	81,875	57,583	21,177
Special dividends and dividend equivalent payments	(1,712,219)	(56,148)	(2,581,552)
Treasury stock purchased	—	—	(389,821)
Proceeds from term loans, net	—	12,779,694	2,937,773
Repayments on term loans	(76,428)	(12,174,305)	(1,284,698)
Proceeds from senior secured notes due 2026, net	3,935,567	—	—
Proceeds from senior subordinated notes, net	544,248	489,608	300,386
Cash tender and redemption of senior subordinated notes due 2020	(550,000)	—	—
Cash tender and redemption of senior subordinated notes due 2021, including premium	—	—	(528,847)
Proceeds from trade receivable securitization facility, net	49,423	—	99,471
Financing fees and other	(1,113)	(10,832)	(17,571)
Net cash provided by (used in) financing activities	2,271,353	1,085,600	(1,443,682)
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	(3,376)	(1,740)	5,519
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(605,531)	1,422,456	(936,433)
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	2,073,017	650,561	1,586,994
CASH AND CASH EQUIVALENTS, END OF PERIOD	$ 1,467,486	$ 2,073,017	$ 650,561
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:			
Cash paid during the period for interest	$ 877,531	$ 634,980	$ 587,718
Cash paid during the period for income taxes	$ 215,154	$ 129,246	$ 185,295

See Notes to Consolidated Financial Statements.

TRANSDIGM GROUP INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
FISCAL YEARS ENDED SEPTEMBER 30, 2019, 2018 AND 2017

1. DESCRIPTION OF THE BUSINESS

Description of the Business – TransDigm Group Incorporated ("TD Group"), through its wholly-owned subsidiary, TransDigm Inc., is a leading global designer, producer and supplier of highly engineered aircraft components for use on nearly every commercial and military aircraft in service today. TransDigm Inc., along with TransDigm Inc.'s direct and indirect wholly-owned operating subsidiaries (collectively, with TD Group, the "Company" or "TransDigm"), offers a broad range of proprietary aerospace components. TD Group has no significant assets or operations other than its100% ownership of TransDigm Inc. TD Group's common stock is listed on the New York Stock Exchange, or the NYSE, under the trading symbol "TDG."

TransDigm's major product offerings, substantially all of which are ultimately provided to end-users in the aerospace industry, include mechanical/electro-mechanical actuators and controls, ignition systems and engine technology, specialized pumps and valves, power conditioning devices, specialized AC/DC electric motors and generators, NiCad batteries and chargers, engineered latching and locking devices, rods and locking devices, engineered connectors and elastomers, databus and power controls, cockpit security components and systems, specialized cockpit displays, aircraft audio systems, specialized lavatory components, seat belts and safety restraints, engineered interior surfaces and related components, advanced sensor products, switches and relay panels, advanced displays, thermal protection and insulation, lighting and control technology, military personnel parachutes, high performance hoists, winches and lifting devices, and cargo loading, handling and delivery systems.

2. ACQUISITIONS AND DIVESTITURES

During the most recent three fiscal years, the Company completed the acquisitions of Esterline, Skandia, Extant, Kirkhill and substantially all of the assets and technical data rights of several aerospace and defense-related product lines. The Company accounted for the acquisitions using the acquisition method and included the results of operations of the acquisitions in its consolidated financial statements from the effective date of each acquisition. As of September 30, 2019, the one-year measurement period is open for Esterline and certain product line acquisitions; therefore, the assets acquired and liabilities assumed related to these acquisitions are subject to adjustment until the end of their respective one-year measurement periods. Pro forma net sales and results of operations for the acquisitions other than Esterline, had they occurred at the beginning of the applicable fiscal year ended September 30, 2019 or 2018, are not material and, accordingly, are not provided.

The acquisitions strengthen and expand the Company's position to design, produce and supply highly engineered proprietary aerospace components in niche markets with significant aftermarket content and provide opportunities to create value through the application of our three core value-driven operating strategies (obtaining profitable new business, improving our cost structure, and providing highly engineered value-added products to customers). The purchase price paid for each acquisition reflects the current earnings before interest, taxes, depreciation and amortization (EBITDA) and cash flows, as well as the future EBITDA and cash flows expected to be generated by the business, which are driven in most cases by the recurring aftermarket consumption over the life of a particular aircraft, estimated to be approximately 25 to 30 years.

Acquisitions

Esterline – On March 14, 2019, TransDigm completed the acquisition of all the outstanding stock of Esterline for $122.50 per share in cash, plus the repayment of Esterline debt. The purchase price, net of cash acquired of approximately $398.2 million, totaled approximately $3,923.9 million. Of the $3,923.9 million purchase price, $3,536.3 million was paid at closing and the remaining $387.6 million was classified as restricted cash for the redemption of Esterline's outstanding senior notes due 2023 (herein the "2023 Notes"). The 2023 Notes were redeemed on April 15, 2019. Esterline, through its subsidiaries, is an industry leader in specialized manufacturing for the aerospace and defense industry, primarily within three core disciplines: advanced materials, avionics and controls and sensors and systems. The acquisition of Esterline expands TransDigm's platform of proprietary and sole source content for the aerospace and defense industry and the Esterline products have significant aftermarket exposure. TransDigm evaluated the strategic fit and description of each Esterline reporting unit to determine the appropriate business segment for the reporting unit. Each Esterline reporting unit is included in one of TransDigm's segments: Power and Control, Airframe, or Non-aviation. Refer to Note 17, "Segments," for additional information about the Company's segments.

The total purchase price of Esterline was allocated to the underlying assets acquired and liabilities assumed based upon management's estimated fair values at the date of acquisition. To the extent the purchase price exceeded the estimated fair value of the net identifiable tangible and intangible assets acquired, such excess was allocated to goodwill. Allocations are based on the acquisition method of accounting and in-process third-party valuation appraisals. The allocation of the purchase price is preliminary and will likely change in future periods, perhaps materially, as fair value estimates of the assets acquired and liabilities assumed are refined and finalized during the allowable one year measurement period.

Except where otherwise noted in the notes to consolidated financial statements, changes in balances and activity where comparable periods are presented in the consolidated financial statements were generally driven by the Esterline acquisition.

The preliminary allocation of the fair value of the Esterline acquisition is summarized in the table below (presented in thousands).

Assets acquired, excluding cash:		
Trade accounts receivable	$	386,671
Inventories		588,741
Prepaid expenses and other current assets		421,973
Property, plant, and equipment		472,623
Other intangible assets		1,309,900
Goodwill		2,176,941
Other		22,196
Total assets acquired, excluding cash		5,379,045
Liabilities assumed:		
Accounts payable		144,516
Other current liabilities		717,621
Other noncurrent liabilities		593,058
Total liabilities assumed		1,455,195
Net assets acquired	$	3,923,850

The Company currently expects that of the approximately $2.2 billion of goodwill recognized for the acquisition, approximately $25.6 million will be deductible for tax purposes and, of the approximately $1.3 billion of other intangible assets recognized for the acquisition, approximately $48.9 million will be deductible for tax purposes.

In connection with the Esterline acquisition, we acquired existing long-term contracts with customers that were incurring gross margin losses as of the date of acquisition. Based on our review of these contracts, we concluded that the terms of certain contracts were unfavorable when compared to market terms as of the acquisition date. As a result, we recognized loss contract reserves as of the acquisition date of $268.4 million based on the present value of the difference between the contractual cash flows of the existing long-term contracts and the estimated cash flows had the contracts been executed at market terms as of the acquisition date. As of September 30, 2019, we have reclassified $9.3 million in loss contract reserves to liabilities held-for-sale, as it pertains to Souriau-Sunbank. Significant assumptions used to determine the fair value of the loss contract reserves using the discounted cash flow model include discount rates, forecasted quantities of products to be sold under the long-term contracts and market prices for respective products. These significant assumptions are forward looking and could be affected by future economic and market conditions. The loss contract reserves are amortized and recorded as an offset to cost of sales over the life of the contracts as actual sales occur under the long-term contracts. Approximately $27.3 million was amortized and recorded as an offset to cost of sales in the consolidated statement of income for the fiscal year ended September 30, 2019. Total loss contract reserves related to the Esterline acquisition were $231.8 million at September 30, 2019, of which $60.0 million is classified in accrued liabilities and $171.8 million is classified in other non-current liabilities in the consolidated balance sheet at September 30, 2019.

The Esterline acquisition contributed net sales and income from continuing operations before taxes of $908.0 million and $57.1 million for the fiscal year ended September 30, 2019. Net income from continuing operations for the fiscal year ended September 30, 2019 included approximately $55.4 million of other intangible asset amortization expense and $71.4 million of inventory step-up amortization expense in cost of sales.

Acquisition costs were expensed as incurred and for the fiscal year ended September 30, 2019 totaled approximately $85.1 million. These costs were recorded in selling and administrative expenses and cost of sales within the consolidated statements of income. In connection with the financing of the Esterline acquisition, approximately $155.3 million of net interest expense (comprised of gross interest expense of $163.5 million and interest income of $8.2 million) was recorded for the fiscal year ended September 30, 2019.

The following pro forma information presents consolidated financial information as if Esterline had been acquired at the beginning of fiscal year 2018. Interest expense has been adjusted as though the debt incurred to finance the Esterline acquisition had been outstanding at October 1, 2017. In the pro forma information presented, fiscal year 2018 includes other intangible asset amortization expense of approximately $103.3 million resulting from the preliminary acquisition accounting. In the pro forma information presented, fiscal year 2019 presented includes other intangible asset amortization of approximately $71.5 million resulting from the preliminary acquisition accounting. In the pro forma information presented, fiscal years 2018 and 2019 include property step-up depreciation of approximately $14.4 million resulting from the preliminary acquisition accounting. The full $71.4 million of inventory step-up amortization resulting from the preliminary acquisition accounting asset step-up has been included in the fiscal year 2018 pro forma results to reflect the pro forma transaction date of October 1, 2017, and thus the inventory step-up amortization expense of $71.4 million recorded for the fiscal year ended September 30, 2019, has been excluded.

The unaudited pro forma consolidated financial information does not necessarily reflect the actual results that would have occurred had the acquisition taken place on October 1, 2017, nor is it meant to be indicative of future results of operations of the combined companies under the ownership and operation of the Company.

(Amounts in thousands, except per share amounts)	Fiscal Year Ended	
	September 30, 2019	September 30, 2018
Net sales	$ 5,860,561	$ 5,291,760
Income from continuing operations attributable to TD Group	$ 847,055	$ 551,211
Net earnings per share attributable to TD Group stockholders from continuing operations - basic and diluted	$ 13.08	$ 8.90

Skandia – On July 13, 2018, the Company acquired all of the outstanding stock of Skandia for a total purchase price of approximately $84.3 million, which is net of a $0.2 million working capital settlement paid in the fourth quarter of fiscal 2018. Skandia provides highly engineered seating foam, foam fabrication, flammability testing and acoustic solutions for the business jet market. Skandia is included as a product line within an existing reporting unit in TransDigm's Airframe segment. No goodwill recognized for the acquisition is deductible for tax purposes.

Extant – On April 24, 2018, the Company acquired all of the outstanding stock of Extant for a total purchase price of approximately $533.1 million in cash, which is net of a $0.2 million working capital settlement received in the third quarter of fiscal 2018. Extant provides a broad range of proprietary aftermarket products and repair and overhaul services to the aerospace and defense end markets. Extant is included in TransDigm's Power and Control segment.

Prior to the Company's acquisition of Extant, Extant was owned by an equity fund sponsored by Warburg Pincus LLC. Michael Graff, a director of TransDigm, is a managing director of Warburg Pincus LLC and was chairman of the board of Extant. Robert Henderson, Vice Chairman of TransDigm, was also on the board of Extant and owned less than 2% of Extant on a fully diluted basis. In addition, Mr. Graff, Mr. W. Nicholas Howley, TransDigm's Executive Chairman, Mr. Douglas Peacock, then a director of TransDigm and now a retired director emeritus, and Mr. David Barr, a director of TransDigm, each had minority interests of less than 1% in the Warburg Pincus LLC fund that owned Extant.

The total purchase price of Extant was allocated to the underlying assets acquired and liabilities assumed based upon the fair values at the date of acquisition. To the extent the purchase price exceeded the fair value of the net identifiable tangible and intangible assets acquired, such excess was allocated to goodwill. The following table summarizes the purchase price allocation of the fair values of the assets acquired and liabilities assumed at the transaction date (presented in thousands).

Assets acquired:		
Current assets, excluding cash acquired	$	53,325
Property, plant, and equipment		4,103
Intangible assets		105,000
Goodwill		407,046
Total assets acquired		569,474
Liabilities assumed:		
Current liabilities		9,876
Other noncurrent liabilities		26,453
Total liabilities assumed		36,329
Net assets acquired	$	533,145

Approximately $62.5 million of the $105.0 million other intangible assets recognized for the acquisition is deductible for tax purposes over 15 years. Of the $407.0 million of goodwill recognized for the acquisition, approximately $12.4 million is deductible for tax purposes.

Extant Acquisitions - On August 30, 2019, the Company's Extant subsidiary completed the acquisition of substantially all of the assets and technical data rights of the Stormscope product line from L3Harris Technologies, Inc. for approximately $20 million in cash. Stormscope is a lightning detection system for the general aviation market. Stormscope is included as a product line of Extant, which is included in TransDigm's Power and Control segment. The Company expects that approximately $11.1 million of goodwill recognized for the acquisition and approximately $7.5 million of other intangible assets recognized for the acquisition will be deductible for tax purposes over 15 years.

On October 1, 2018, the Company's Extant subsidiary completed the acquisition of substantially all of the assets and technical data rights of the Corona, California operations of NavCom for approximately $27 million in cash. NavCom develops, manufactures, and supports high-reliability, mission-critical electronics, avionics and sub-assemblies. NavCom is included as a product line of Extant, which is included in TransDigm's Power and Control segment. Approximately $9.0 million of goodwill recognized for the acquisition is deductible for tax purposes over 15 years.

Kirkhill – On March 15, 2018, the Company acquired the assets and certain liabilities of the Kirkhill elastomers business from Esterline Technologies for a total purchase price of approximately $49.3 million, which is net of a $0.6 million working capital settlement received in the third quarter of fiscal 2018. Kirkhill, headquartered in Brea, California, is a leading supplier of highly engineered aerospace elastomers. Kirkhill's products are primarily proprietary, sole source with significant aftermarket content and used in a broad variety of most major commercial transport and military platforms. Kirkhill is included in TransDigm's Airframe segment. No goodwill recognized for the acquisition is deductible for tax purposes.

Third Quarter Fiscal 2017 Acquisitions – The Company completed three product line acquisitions within the third quarter of fiscal 2017. The third quarter fiscal 2017 acquisitions were acquired for an aggregate purchase price of approximately $106.7 million in cash, which includes working capital settlements totaling $1.0 million paid in the third and fourth quarters of fiscal 2017 and an earn-out of $0.4 million paid in the second quarter of fiscal 2018. All three product lines consist primarily of proprietary, sole source products with significant aftermarket content. The products include highly engineered aerospace controls, quick disconnect couplings, and communication electronics. Each product line acquired was consolidated into an existing TransDigm reporting unit within TransDigm's Power & Control segment. Approximately $66.0 million of goodwill recognized for the acquisitions is deductible for tax purposes over 15 years and approximately $9.0 million of goodwill recognized for the acquisitions is not deductible for tax purposes.

Divestitures

Souriau-Sunbank Companies – On July 21, 2019, TransDigm entered into a binding offer (the “Put Agreement”) with Eaton Corporation plc (“Eaton”) for the acquisition by Eaton of the shares of Souriau SAS, Souriau USA Inc. and Sunbank Family of Companies LLC which comprise the Souriau-Sunbank Connection Technologies business (“Souriau-Sunbank”). Pursuant to the terms of the Put Agreement, after completion of the consultation process with the French works council, TransDigm has the right to require Eaton to enter into a securities purchase agreement (the “Purchase

Agreement”) providing for the purchase by Eaton from TransDigm of the shares of Souriau-Sunbank. The Purchase Agreement was entered into by the parties on October 28, 2019. Pursuant to the terms of the Purchase Agreement, Eaton will purchase the shares of the Souriau-Sunbank for a cash purchase price of approximately $920 million.

The transaction is subject to execution and delivery of the Purchase Agreement and other definitive agreements, the satisfaction or waiver of customary closing conditions and receipt of required regulatory approvals, all of which have been received other than the French foreign investment approval. The parties expect to complete the transaction during the first quarter of fiscal 2020. Souriau-Sunbank is classified as held-for-sale as of September 30, 2019. The results of operations of Souriau-Sunbank are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented since the date acquired (refer to Note 23, “Discontinued Operations”).

Esterline Interface Technology Group – On September 20, 2019, TransDigm completed the divestiture of its Esterline Interface Technology (“EIT”) group of businesses to an affiliate of KPS Capital Partners, LP for approximately $190 million. EIT was acquired by TransDigm as part of its acquisition of Esterline in March 2019. The results of operations of EIT are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented since the date acquired (refer to Note 23, “Discontinued Operations”).

Schroth – On February 22, 2017, the Company acquired all of the outstanding stock of Schroth Safety Products GmbH and certain aviation and defense assets and liabilities from subsidiaries of Takata Corporation (collectively, "Schroth"), for a total purchase price of approximately $89.7 million, of which consisted primarily of $79.7 million paid in cash during fiscal 2017 and an approximately $9.0 million indemnity holdback, of which $8.5 million was paid in April 2018 and $0.5 million remains a reserve as of September 30, 2019.

In connection with the settlement of a Department of Justice investigation into the competitive effects of the acquisition, during the fourth quarter of 2017, the Company committed to divest of the Schroth business. Therefore, Schroth was classified as held-for-sale beginning in the fourth quarter of 2017. The results of operations of Schroth are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented.

On January 26, 2018, the Company completed the sale of Schroth in a management buyout to a private equity fund and certain members of Schroth management for approximately $61.4 million, which includes a working capital adjustment of $0.3 million that was paid in July 2018. Further disclosure related to Schroth’s discontinued operations is included in Note 23, “Discontinued Operations.”

3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Consolidation—The accompanying consolidated financial statements were prepared in conformity with generally accepted accounting principles in the United States (“GAAP”) and include the accounts of TD Group and subsidiaries. All significant intercompany balances and transactions have been eliminated. Certain reclassifications have been made to the prior year consolidated financial statements to conform to current year classifications related to the adoption of ASU 2017-07, "Compensation—Retirement Benefits (ASC 715), impacting the presentation of the net periodic benefit cost in the consolidated statements of income. The accounting pronouncement and impact of the fiscal year 2019 adoption of the pronouncement on the consolidated financial statements is summarized in Note 4, "Recent Accounting Pronouncements."

The Esterline businesses were acquired during the second quarter of fiscal 2019 and preliminarily assessed as a separate segment of the Company. During the third quarter of fiscal 2019, the Esterline businesses were integrated into TransDigm's existing Power & Control, Airframe and Non-aviation segments. For financial information about our segments, see Note 17, "Segments."

Revenue Recognition—The Company adopted Accounting Standards Codification (“ASC”) 606, “Revenue from Contracts with Customers,” in the first quarter of fiscal 2019 using the modified retrospective method. The adoption of this standard did not have a material impact on our consolidated results of operations, financial position or cash flows. The results for periods before fiscal 2019 were not restated for the new standard and the cumulative effect of the change in accounting was recognized through retained earnings at the date of adoption. Refer to Note 5, "Revenue Recognition," for additional disclosures relating to ASC 606.

Revenue is recognized from the sale of products when control transfers to the customer, which is demonstrated by our right to payment, a transfer of title, a transfer of the risk and rewards of ownership, or the customer acceptance, but most frequently upon shipment where the customer obtains physical possession of the goods. The majority of the Company's revenue is recorded at a point in time. Sales recognized over time are generally accounted for using an input measure to determine progress completed at the end of the period. Sales for service contracts generally are recognized as the services are provided. For agreements with multiple performance obligations, judgment is required to determine whether performance obligations specified in these agreements are distinct and should be accounted for as separate revenue transactions for recognition purposes.

Shipping and Handling Costs—Shipping and handling costs are included in cost of sales in the consolidated statements of income.

Research and Development Costs—The Company expenses research and development costs as incurred and classifies such amounts in selling and administrative expenses. The expense recognized for research and development costs for the fiscal years ended September 30, 2019, 2018 and 2017 was approximately $116.8 million, $73.8 million, and $73.8 million, respectively.

Cash Equivalents—The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents.

Allowance for Uncollectible Accounts—The Company reserves for amounts determined to be uncollectible based on specific identification of losses and estimated losses based on historical experience. The allowance also incorporates a provision for the estimated impact of disputes with customers. The determination of the amount of the allowance for uncollectible accounts is subject to significant levels of judgment and estimation by management. If circumstances change or economic conditions deteriorate or improve, the allowance for uncollectible accounts could increase or decrease.

Inventories—Inventories are stated at the lower of cost or net realizable value. Cost of inventories is generally determined by the average cost and the first-in, first-out (FIFO) methods and includes material, labor and overhead related to the manufacturing process. Provision for potentially obsolete or slow-moving inventory is made based on management's analysis of inventory levels and future sales forecasts.

Property, Plant and Equipment—Property, plant and equipment are stated at cost and include improvements which significantly increase capacities or extend the useful lives of existing plant and equipment. Depreciation is computed using the straight-line method over the following estimated useful lives: land improvements from 10 to 20 years, buildings and improvements from 5 to 30 years, machinery and equipment from 2 to 10 years and furniture and fixtures from 3 to 10 years. Net gains or losses related to asset dispositions are recognized in earnings in the period in which dispositions occur. Routine maintenance, repairs and replacements are expensed as incurred. Amortization expense of assets accounted for as capital leases is included with depreciation expense.

Property, plant and equipment is assessed for potential impairment whenever indicators of impairment are present by determining whether the carrying value of the property can be recovered through projected, undiscounted cash flows from future operations over the property's remaining estimated useful life. Any impairment recognized is the amount by which the carrying amount exceeds the fair value of the asset. Fair value is measured based on quoted market prices in active markets, if available. If quoted market prices are not available, the estimate of fair value is based on various valuation techniques, including the discounted value of estimated future cash flows.

Debt Issuance Costs, Premiums and Discounts—The cost of obtaining financing as well as premiums and discounts are amortized using the effective interest method over the terms of the respective obligations as a component of interest expense within the consolidated statements of income. Debt issuance costs are presented in the consolidated balance sheets as a direct reduction from the carrying amount of the related debt liabilities.

Financial Instruments—Interest rate swap and cap agreements are used to manage interest rate risk associated with floating-rate borrowings under our credit facility. The interest rate swap and cap agreements utilized by the Company effectively modify the Company's exposure to interest rate risk by converting a portion of the Company's floating-rate debt to a fixed rate basis through the expiration date of the interest rate swap and cap agreements, thereby reducing the impact of interest rate changes on future interest expense. These agreements involve the receipt of floating rate amounts in exchange for fixed rate interest payments over the term of the agreements without an exchange of the underlying principal amount. These derivative instruments qualify as effective cash flow hedges under GAAP.

The Company transacts business in various foreign currencies, which subjects the Company's cash flows and earnings to exposure related to changes in foreign currency exchange rates. These exposures arise primarily from purchases or sales of products and services from third parties. Foreign currency forward exchange contracts provide for the purchase or sale of foreign currencies at specified future dates at specified exchange rates, and are used to offset changes in the fair value of certain assets or liabilities or forecasted cash flows resulting from transactions denominated in foreign currencies.

For the interest rate swap and cap agreements and the foreign currency forward contracts designated as cash flow hedges, the effective portion of the gain or loss from the financial instruments was initially reported as a component of accumulated other comprehensive loss in stockholders' deficit and subsequently reclassified into earnings in the same line as the hedged item in the same period or periods during which the hedged item affected earnings. As the interest rate swap and cap agreements are used to manage interest rate risk, any gains or losses from the derivative instruments that are reclassified into earnings are recognized in interest expense - net in the consolidated statements of income. As the foreign currency forward exchange contracts are used to manage foreign currency exposure primarily arising from purchases or sales from third parties, any gains or losses from the derivative instruments that are reclassified into earnings are recognized in cost of sales or selling and administrative expenses in the consolidated statements of income.

Goodwill and Other Intangible Assets—In accordance with ASC 805, “Business Combinations,” the Company uses the acquisition method of accounting to allocate costs of acquired businesses to the assets acquired and liabilities assumed based on their estimated fair values at the dates of acquisition. The excess costs of acquired businesses over the fair values of the assets acquired and liabilities assumed were recognized as goodwill. The valuations of the acquired assets and liabilities assumed will impact the determination of future operating results. Determining the fair value of assets acquired and liabilities assumed requires management’s judgment and often involves the use of significant estimates and assumptions, including assumptions with respect to future cash inflows and outflows, revenue growth rates, discount rates, customer attrition rates, royalty rates, asset lives and market multiples, among other items. We determine the fair values of intangible assets acquired generally in consultation with third-party valuation advisors. Fair value adjustments to the Company’s assets and liabilities are recognized and the results of operations of the acquired business are included in our consolidated financial statements from the effective date of the merger or acquisition. Intangible assets other than goodwill are recognized if the benefit of the intangible asset is obtained through contractual or other legal rights, or if the intangible asset can be sold, transferred, licensed or exchanged, regardless of the Company’s intent to do so.

Goodwill is the excess of the purchase price paid over the estimated fair value of the net assets of a business acquired. Other intangible assets consist of identifiable intangibles acquired or recognized in accounting for the acquisitions (trademarks, trade names, technology, customer relationships, order backlog and other intangible assets). Goodwill and intangible assets that have indefinite useful lives (i.e., trademarks and trade names) are subject to annual impairment testing. Management determines fair value using a discounted future cash flow analysis or other accepted valuation techniques. The Company performs an annual impairment test for goodwill and other intangible assets as of the first day of the fourth fiscal quarter of each year, or more frequently, if an event occurs or circumstances change that would more likely than not reduce fair value below current value.

At the time of goodwill impairment testing, the Company first assesses qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, and whether it is therefore necessary to perform the quantitative goodwill impairment test. The quantitative goodwill impairment test consists of two steps. The first step of the goodwill impairment test, used to identify potential impairment, compares the fair value of a reporting unit (as defined) with its carrying amount, including goodwill. If the fair value of the reporting unit exceeds its carrying amount, goodwill is not considered impaired, and the second step of the goodwill impairment test is unnecessary. The second step measures the amount of impairment, if any, by comparing the carrying value of the goodwill associated with a reporting unit to the implied fair value of the goodwill derived from the estimated overall fair value of the reporting unit and the individual fair values of the other assets and liabilities of the reporting unit.

GAAP requires that the annual, and any interim, impairment assessment be performed at the reporting unit level. The reporting unit level is one level below an operating segment. Substantially all goodwill was determined and recognized for each reporting unit pursuant to the accounting for the merger or acquisition as of the date of each transaction. With respect to acquisitions integrated into an existing reporting unit, any acquired goodwill is combined with the goodwill of the reporting unit.

The impairment test for indefinite lived intangible assets consists of a comparison between their fair values and carrying values. If the carrying amounts of intangible assets that have indefinite useful lives exceed their fair values, an impairment loss will be recognized in an amount equal to the sum of any such excesses.

The Company assesses the recoverability of its amortizable intangible assets only when indicators of impairment are present by determining whether the amortization over their remaining lives can be recovered through projected, undiscounted cash flows from future operations. Amortization of amortizable intangible assets is computed using the straight-line method over the following estimated useful lives: technology from 20 to 22 years, order backlog from 1 year to 1.5 years, customer relationships over 20 years and other intangible assets over 20 years.

Stock-Based Compensation—The Company records stock-based compensation expense using the Black-Scholes pricing model based on certain valuation assumptions. Compensation expense is recorded over the vesting periods of the stock options. The Company has classified stock-based compensation primarily within selling and administrative expenses to correspond with the classification of employees that receive stock option grants. No expense is recognized for any stock options ultimately forfeited because the recipients fail to meet vesting requirements.

Income Taxes—The provision for income taxes is calculated using the asset and liability method. Under the asset and liability method, deferred income taxes are recognized for the tax effect of temporary differences between the financial statement carrying amount of assets and liabilities and the amounts used for income tax purposes and for certain changes in valuation allowances. Valuation allowances are recorded to reduce certain deferred tax assets when, in our estimation, it is more likely than not that a tax benefit will not be realized.

Contingencies—During the ordinary course of business, the Company is from time to time threatened with, or may become a party to, legal actions and other proceedings. While the Company is currently involved in certain legal proceedings, it believes the results of these proceedings will not have a material adverse effect on its financial condition, results of operations, or cash flows.

Estimates—The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Comprehensive Income (Loss)—The term “comprehensive income (loss)” represents the change in stockholders’ equity (deficit) from transactions and other events and circumstances resulting from non-stockholder sources. The Company’s accumulated other comprehensive income or loss, consisting principally of fair value adjustments to its interest rate swap and cap agreements (net of tax), cumulative foreign currency translation adjustments and pension liability adjustments (net of tax), is reported separately in the accompanying consolidated statements of comprehensive income.

Foreign Currency Translation and Transactions—The assets and liabilities of subsidiaries located outside the United States are translated into U.S. dollars at the rates of exchange in effect at the balance sheet dates. Revenue and expense items are translated at the average monthly exchange rates prevailing during the period. Gains and losses resulting from foreign currency transactions are recognized currently in income, and those resulting from translation of financial statements are accumulated as a separate component of other comprehensive income (loss) for the period. Foreign currency gains or losses recognized currently in income from changes in exchange rates were immaterial to our results of operations.

Earnings per Share—Earnings per share information is determined using the two-class method, which includes the weighted-average number of common shares outstanding during the period and other securities that participate in dividends (“participating securities”). Our vested stock options are considered “participating securities” because they include non-forfeitable rights to dividends. In applying the two-class method, earnings are allocated to both common stock shares and participating securities based on their respective weighted-average shares outstanding for the period. Diluted earnings per share information may include the additional effect of other securities, if dilutive, in which case the dilutive effect of such securities is calculated using the treasury stock method. Contingently issuable shares are not included in earnings per share until the period in which the contingency is satisfied; therefore, basic and diluted earnings per share are the same.

Pension Benefits—The Company accounts for pension expense using the end of the fiscal year as our measurement date. Management selects appropriate assumptions including the discount rate, rate of increase in future compensation levels and assumed long-term rate of return on plan assets. The assumptions are based upon historical results, the current economic environment and reasonable expectations of future events. Actual results which vary from our assumptions are accumulated and amortized over future periods, and accordingly, are recognized in expense in these periods. Significant differences between the assumptions and actual experience or significant changes in assumptions could impact the pension costs and the pension obligation.

4. RECENT ACCOUNTING PRONOUNCEMENTS

In May 2014, the FASB issued Accounting Standards Update (“ASU”) 2014-09, which created a new topic in the Accounting Standards Codification (“ASC”) 606, “Revenue from Contracts with Customers.” In addition to superseding and replacing nearly all existing U.S. GAAP revenue recognition guidance, including industry-specific guidance, ASC 606 requires an entity to recognize revenue in a manner that depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The standard also specifies the accounting of some costs to obtain or fulfill a contract with a customer and expands the disclosure requirements around contracts with customers. The Company adopted this standard in the first quarter of 2019 using the modified retrospective method. The adoption of this standard did not have a material impact on our consolidated results of operations, financial position or cash flows. The results for periods before fiscal 2019 were not restated for the new standard and the cumulative effect of the change in accounting was recognized through retained earnings at the date of adoption. Refer to Note 5, "Revenue Recognition," for additional disclosures relating to ASC 606.

In February 2016, the FASB issued ASU 2016-02, “Leases (ASC 842),” which requires lessees to recognize a right-of-use asset and lease liability for all leases with a term of more than 12 months. ASU 2016-02 is effective for us on October 1, 2019, and requires a modified retrospective application. In July 2018, the FASB issued ASU 2018-11, “Leases (ASC

842) Targeted Improvements," which provides an additional transition method that allows entities to initially apply the new standard at the adoption date and recognize a cumulative effect adjustment to the opening balance of retained earnings in the period of adoption without restating prior periods. We plan to utilize this transition method upon adoption, and as a result, we will not adjust comparative period financial information or make the new required lease disclosures for periods before the effective date. Our preparation for the adoption of ASC 842 is substantially complete. We have compiled an inventory of our lease agreements in order to determine the impact the new guidance will have on our financial statements and disclosures and have implemented new lease accounting software in preparation for the standard's additional reporting requirements. We have elected certain practical expedients available under the guidance, including a package of practical expedients which allows us to not reassess prior conclusions related to contracts containing leases, lease classification, and initial direct costs. Based on our assessment to date, we expect that the adoption of ASC 842 will result in the recognition of right-of-use assets and corresponding lease liabilities of approximately 1% of total assets and liabilities, respectively, in our consolidated balance sheet as of October 1, 2019. We do not expect the new standard to have a material impact on our consolidated results of operations and cash flows.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments (ASU 2016-13)," which changes the impairment model for most financial assets. The new model uses a forward-looking expected loss method, which will generally result in earlier recognition of allowances for losses. ASU 2016-13 is effective for the Company for annual and interim periods beginning after October 1, 2020 and early adoption is permitted. The Company is currently evaluating the impact of adopting this standard on our consolidated financial statements and disclosures.

In October 2016, the FASB issued ASU 2016-16, "Intra-Entity Transfers of Assets Other Than Inventory" (ASU 2016-16). This accounting standard requires companies to recognize the income tax effects of intercompany sales and transfers of assets, other than inventory, in the period in which the transfer occurs. Under previous guidance companies were required to defer the income tax effects of intercompany transfers of assets by recording prepaid taxes, until such assets were sold to an outside party or otherwise recognized. Current guidance requires companies to write off any income tax amounts previously deferred as prepaid taxes from past intercompany transactions, and to record deferred tax balances for amounts not previously recognized, through a cumulative-effect adjustment to retained earnings. ASU 2016-16 is effective for public business entities for fiscal years beginning after December 15, 2017, including interim periods within those years. The Company adopted this standard in the first quarter of fiscal 2019. The adoption of this standard did not have a material impact on our consolidated financial statements. Refer to the consolidated statements of stockholders' deficit for the impact of the adoption of ASU 2016-16 on retained earnings.

In January 2017, the FASB issued ASU 2017-04, "Simplifying the Test for Goodwill Impairment," to eliminate Step 2 from the goodwill impairment test in order to simplify the subsequent measurement of goodwill. The guidance is effective for the Company for fiscal years beginning after October 1, 2020, with early adoption permitted. The adoption of this standard is not expected to have a material impact on our consolidated financial statements and disclosures.

In March 2017, the FASB issued ASU 2017-07, "Compensation—Retirement Benefits (ASC 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost," that changes how employers that sponsor defined benefit and/or other postretirement benefit plans present the net periodic benefit cost in the income statement. Under previous guidance, companies included all components of the net periodic benefit costs in the same lines as the service cost component. Current guidance requires employers to present the other components of the net periodic benefit costs separately from the line items that include the service cost and outside of any subtotal of operating income. In addition, only the service cost component will be eligible for capitalization in assets. Employers will have to disclose the lines used to present the other components of net periodic benefit cost, if the components are not presented separately in the income statement. The standard is effective for public business entities for fiscal years beginning after December 15, 2017, and interim periods within the fiscal year. The Company adopted this standard in the first quarter of fiscal 2019. The adoption of this standard did not have a material impact on our consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, "Compensation—Stock Compensation (ASC 718): Scope of Modification Accounting," which provides clarity on which changes to the terms or conditions of share-based payment awards require an entity to apply the modification accounting provisions required in ASC 718. The standard is effective for all entities for annual periods beginning after December 15, 2017, with early adoption permitted, including adoption in any interim period for which financial statements have not yet been issued. The Company adopted this standard in the first quarter of fiscal 2019. The adoption of this standard did not have a material impact on our consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, "Income Statement - Reporting Comprehensive Income (ASC 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," which gives entities the option to reclassify tax effects stranded in accumulated other comprehensive income as a result of the Tax Cuts and Jobs Act (the "Act") into retained earnings. The guidance allows entities to reclassify from accumulated other comprehensive income to retained earnings stranded tax effects resulting from the Act's new federal corporate income tax rate. The guidance also allows entities to elect to reclassify other stranded tax effects that relate to the Act but do not directly relate to the change in the federal tax rate (e.g., state taxes, changing from a worldwide tax system to a territorial system). Tax effects that are stranded in accumulated other comprehensive income for other reasons (e.g., prior changes in tax law, a change in valuation allowance) may not be reclassified. The standard is effective for the Company for fiscal years beginning after October 1, 2019, and interim periods within the fiscal year. Early adoption is permitted, including adoption in any interim period for which financial statements have not yet been issued. Entities have the option to apply the guidance retrospectively or in the period of adoption. As early adoption is permissible, the Company adopted the pronouncement beginning October 1, 2018. Changes were applied in the period of adoption and prior periods were not adjusted.The adoption of this standard did not have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-14, "Compensation - Retirement Benefits - Defined Benefit Plans - General (ASC 715-20)." ASU 2018-14 modifies disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. The ASU also requires an entity to disclose the weighted-average interest crediting rates for cash balance plans and to explain the reasons for significant gains and losses related to changes in the benefit obligation. The ASU is effective for the Company on October 1, 2020 and early adoption is permitted. The Company is currently evaluating the impact of adopting this standard on our consolidated financial statements and disclosures.

5. REVENUE RECOGNITION

The Company's sales are concentrated in the aerospace industry. TransDigm's customers include: distributors of aerospace components; commercial airlines, large commercial transport and regional and business aircraft OEMs; various armed forces of the United States and friendly foreign governments; defense OEMs; system suppliers; and various other industrial customers.

In 2019, one customer accounted for approximately 11% of the Company's net sales for the fiscal year ended 2019. Sales to this customer was split approximately 60% and 40% between the Airframe and Power & Control segments, respectively. No other customer individually accounted for more than 10% of the Company's net sales.

In 2018 and 2017, two customers individually accounted for more than 10% of the Company's net sales. One customer accounted for approximately 11% and 13% of the Company's net sales for fiscal years ended 2018 and 2017, respectively. The second customer accounted for approximately 10% and 11% of the Company's net sales for fiscal years ended 2018 and 2017, respectively. Sales to these customers were split approximately evenly between the Power & Control and Airframe segments.

Sales to foreign customers, primarily in Western Europe, Canada and Asia, were $1,778.4 million, $1,355.1 million and $1,318.9 million during the fiscal years ended 2019, 2018 and 2017.

Adoption of ASC 606, "Revenue from Contracts with Customers"

The Company adopted ASC 606, "Revenue from Contracts with Customers," beginning October 1, 2018 using the modified retrospective method.

The new standard primarily impacted the Company's timing of revenue recognition for certain contracts and subcontracts with the U.S. government that contain termination for convenience clauses and for which the product being produced has no alternative use, and resulted in an increase to retained earnings of $3.3 million. The comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods.

The cumulative effect of the changes made to our consolidated balance sheet as of October 1, 2018 for the adoption of ASC 606 were as follows (in thousands):

	September 30, 2018	Adjustments due to ASC 606	October 1, 2018
Assets			
Unbilled receivables[1]	$ 10,056	$ 8,272	$ 18,328
Inventories - Net	805,292	(3,977)	801,315
Liabilities and Stockholders' Deficit			
Deferred income taxes	$ 399,496	$ 1,011	$ 400,507
Accumulated deficit	(2,246,578)	3,284	(2,243,294)

(1) Included in prepaid expenses and other on the consolidated balance sheet.

Revenue is recognized from the sale of products when control transfers to the customer, which is demonstrated by our right to payment, a transfer of title, a transfer of the risk and rewards of ownership, or the customer acceptance, but most frequently upon shipment where the customer obtains physical possession of the goods.

The majority of the Company's revenue is recorded at a point in time.

In certain contracts the Company found that under ASC 606, control transferred to the customer over time primarily in contracts where the customer is required to pay for the cost of both the finished and unfinished goods at the time of cancellation plus a reasonable profit relative to the work performed for products that were customized for the customer. Upon adoption of ASC 606, we recognize revenue over time for those agreements that have a right to margin and where the products being produced have no alternative use. Prior to the adoption date, revenue related to these agreements was recognized when the goods were shipped; as a result of the adoption of ASC 606, a portion of our revenue may be earned in periods earlier than it would have been in prior years. The cumulative adjustment to retained earnings upon adoption, which is presented in the table above, represents those earnings that would have been recognized in the previous year had ASC 606 been in effect during that time.

Based on our production cycle, it is generally expected that goods related to the revenue represented in that adjustment will be shipped and billed within the current year. For revenue recognized over time, we estimate the amount of revenue attributable to a contract earned at a given point during the production cycle based on certain costs, such as materials and labor incurred to date, plus the expected profit, which is a cost-to-cost input method.

The Company’s payment terms vary by the type and location of the customer and the products or services offered. The Company does not offer any payment terms that would meet the requirements for consideration as a significant financing component under ASC 606.

Shipping and handling fees and costs incurred in connection with products sold are recorded in cost of sales in the consolidated statements of income, and are not considered a performance obligation to our customers.

Contract Assets and Liabilities—Contract assets reflect revenue recognized and performance obligations satisfied in advance of customer billing or reimbursable costs related to a specific contract. Contract liabilities relate to payments received in advance of the satisfaction of performance under the contract. We receive payments from customers based on the terms established in our contracts. The following table summarizes our contract assets and liabilities balances (in thousands):

	September 30, 2019	October 1, 2018	Change
Contract assets, current[1]	$ 44,097	$ 18,328	$ 25,769
Contract assets, non-current[2]	7,238	118	7,120
Total contract assets	51,335	18,446	32,889
Contract liabilities, current[3]	17,840	2,742	15,098
Contract liabilities, non-current[4]	13,234	—	13,234
Total contract liabilities	31,074	2,742	28,332
Net contract assets	$ 20,261	$ 15,704	$ 4,557

(1) Included in prepaid expenses and other on the consolidated balance sheet.

(2) Included in other non-current assets on the consolidated balance sheet.

(3) Included in accrued liabilities on the consolidated balance sheet.

(4) Included in other non-current liabilities on the consolidated balance sheet.

Changes in the contract asset and liability balances during the fiscal year ended September 30, 2019 were not materially impacted by any factors other than the Esterline acquisition. For the fiscal year ended September 30, 2019, the revenue recognized that was previously included in the beginning balance of contract liabilities was immaterial.

Refer to Note 17, “Segments,” for disclosures related to the disaggregation of revenue.

6. EARNINGS PER SHARE

The following table sets forth the computation of basic and diluted earnings per share (in thousands, except per share data) using the two-class method:

	Fiscal Years Ended September 30,		
	2019	2018	2017
Numerator for earnings per share:			
Income from continuing operations including noncontrolling interests	$ 840,879	$ 961,536	$ 628,541
Net income attributable to noncontrolling interests	(1,541)	—	—
Net income from continuing operations attributable to TD Group	839,338	961,536	628,541
Less dividends paid on participating securities	(111,021)	(56,148)	(159,257)
	728,317	905,388	469,284
Income (loss) from discontinued operations, net of tax	50,432	(4,474)	(31,654)
Net income applicable to TD Group common stock—basic and diluted	$ 778,749	$ 900,914	$ 437,630
Denominator for basic and diluted earnings per share under the two-class method:			
Weighted-average common shares outstanding	53,091	52,345	52,517
Vested options deemed participating securities	3,174	3,252	3,013
Total shares for basic and diluted earnings per share	56,265	55,597	55,530
Net earnings per share from continuing operations—basic and diluted	$ 12.94	$ 16.28	$ 8.45
Net earnings (loss) per share from discontinued operations—basic and diluted	0.90	(0.08)	(0.57)
Net earnings per share	$ 13.84	$ 16.20	$ 7.88

7. TRADE ACCOUNTS RECEIVABLE

Trade accounts receivable consist of the following (in thousands):

	September 30, 2019	September 30, 2018
Trade accounts receivable—gross	$ 1,085,005	$ 708,984
Allowance for uncollectible accounts	(17,402)	(4,674)
Trade accounts receivable—net	$ 1,067,603	$ 704,310

At September 30, 2019, approximately 20% of the Company’s trade accounts receivable was due from two customers. One customer accounted for approximately 13% percent of the Company’s trade accounts receivable and the other customer accounted for approximately 7% of the Company’s trade accounts receivable. In addition, approximately 36% of the Company’s trade accounts receivable was due from entities that operate principally outside of the United States. Credit is extended based on an evaluation of each customer’s financial condition and collateral is generally not required.

8. INVENTORIES

Inventories consist of the following (in thousands):

	September 30, 2019	September 30, 2018
Raw materials and purchased component parts	$ 804,687	$ 540,290
Work-in-progress	360,230	237,335
Finished goods	191,535	127,018
Total	1,356,452	904,643
Reserves for excess and obsolete inventory	(123,803)	(99,351)
Inventories—Net	$ 1,232,649	$ 805,292

9. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consist of the following (in thousands):

	September 30, 2019	September 30, 2018
Land and improvements	$ 95,536	$ 77,455
Buildings and improvements	407,461	171,269
Machinery, equipment and other	628,096	448,014
Construction in progress	52,241	31,237
Total	1,183,334	727,975
Accumulated depreciation	(426,577)	(339,642)
Property, plant and equipment—net	$ 756,757	$ 388,333

10. INTANGIBLE ASSETS

Other intangible assets - net in the consolidated balance sheets consist of the following at September 30 (in thousands):

	2019			2018		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Trademarks and trade names	$ 956,377	$ —	$ 956,377	$ 799,749	$ —	$ 799,749
Technology	1,805,715	496,311	1,309,404	1,347,314	416,579	930,735
Order backlog	106,889	44,603	62,286	12,200	5,409	6,791
Customer relationships	437,973	29,777	408,196	62,561	14,277	48,284
Other	16,707	9,150	7,557	10,873	8,028	2,845
Total	$ 3,323,661	$ 579,841	$ 2,743,820	$ 2,232,697	$ 444,293	$ 1,788,404

Information regarding the amortization expense of amortizable intangible assets is detailed below (in thousands):

Annual Amortization Expense:

Years ended September 30,	
2019	$ 134,952
2018	72,454
2017	89,226

Estimated Amortization Expense:

Years ending September 30,	
2020	$ 182,583
2021	119,067
2022	119,067
2023	119,067
2024	119,067

As disclosed in Note 2, "Acquisitions and Divestitures," the estimated fair value of the net identifiable tangible and intangible assets acquired from Esterline are based on the acquisition method of accounting and are subject to adjustment upon completion of the third-party valuation appraisals. Material adjustments may occur. The fair value of the net identifiable tangible and intangible assets acquired will be finalized within the allowable one year measurement period. Intangible assets acquired during fiscal year ended September 30, 2019 are summarized in the table below (in thousands):

	Gross Amount	Amortization Period
Intangible assets not subject to amortization:		
Goodwill	$ 2,194,324	
Trademarks and trade names	238,200	
	2,432,524	
Intangible assets subject to amortization:		
Technology	503,500	20 years
Order backlog	99,100	1.5 years
Customer relationships	483,935	20 years
	1,086,535	18 years
Total	$ 3,519,059	

The changes in the carrying amount of goodwill by segment for the fiscal years ended September 30, 2018 and 2019 were as follows (in thousands):

	Power & Control	Airframe	Non-aviation	Total
Balance at September 30, 2017	$ 3,269,981	$ 2,382,082	$ 93,275	$ 5,745,338
Goodwill acquired during the year (Note 2)	402,540	73,321	—	475,861
Purchase price allocation adjustments	5,354	—	—	5,354
Currency translation adjustment	—	(3,258)	—	(3,258)
Other	(192)	187	—	(5)
Balance at September 30, 2018	3,677,683	2,452,332	93,275	6,223,290
Goodwill acquired during the year (Note 2)	468,613	1,179,999	545,712	2,194,324
Divestiture of goodwill acquired during the year	—	—	(42,678)	(42,678)
Reclassification of goodwill acquired to assets held-for-sale (Note 23)	—	—	(480,312)	(480,312)
Purchase price allocation adjustments	(8,690)	(22,901)	—	(31,591)
Currency translation adjustment	(16,422)	(11,695)	(14,813)	(42,930)
Balance at September 30, 2019	$ 4,121,184	$ 3,597,735	$ 101,184	$ 7,820,103

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11. ACCRUED LIABILITIES

Accrued liabilities consist of the following (in thousands):

	September 30, 2019	September 30, 2018
Compensation and related benefits	$ 177,862	$ 81,035
Interest	92,642	96,590
Interest rate swap agreements	13,219	528
Product warranties	33,882	21,056
Dividend equivalent payments—current (see Note 18)	63,796	24,200
Environmental and other litigation reserves	12,016	31,079
Income taxes payable	44,370	9,168
Loss contract reserves	64,665	11,682
Other	173,243	76,105
Total	$ 675,695	$ 351,443

12. DEBT

The Company's debt consists of the following (in thousands):

	September 30, 2019			
	Gross Amount	Debt Issuance Costs	Original Issue Discount or Premium	Net Amount
Short-term borrowings—trade receivable securitization facility	$ 350,000	$ (481)	$ —	$ 349,519
Term loans	$ 7,523,507	$ (57,744)	$ (17,214)	$ 7,448,549
6.00% senior subordinated notes due July 15, 2022 (2022 Notes)	1,150,000	(4,061)	—	1,145,939
6.50% senior subordinated notes due July 15, 2024 (2024 Notes)	1,200,000	(5,690)	—	1,194,310
6.50% senior subordinated notes due May 15, 2025 (2025 Notes)	750,000	(2,977)	3,090	750,113
6.375% senior subordinated notes due June 15, 2026 (6.375% 2026 Notes)	950,000	(6,790)	—	943,210
6.875% senior subordinated notes due May 15, 2026 (6.875% 2026 Notes)	500,000	(5,532)	(3,137)	491,331
6.25% secured notes due March 15, 2026 (2026 Secured Notes)	4,000,000	(59,630)	1,812	3,942,182
7.50% senior subordinated notes due March 15, 2027 (2027 Notes)	550,000	(5,300)	—	544,700
Government refundable advances	39,195	—	—	39,195
Capital lease obligations	49,905	—	—	49,905
	16,712,607	(147,724)	(15,449)	16,549,434
Less current portion	80,951	(738)	—	80,213
Long-term debt	$ 16,631,656	$ (146,986)	$ (15,449)	$ 16,469,221

	September 30, 2018			
	Gross Amount	Debt Issuance Costs	Original Issue Discount or Premium	Net Amount
Short-term borrowings—trade receivable securitization facility	$ 300,000	$ (481)	$ —	$ 299,519
Term loans	$ 7,599,932	$ (69,697)	$ (21,030)	$ 7,509,205
5.50% 2020 Notes	550,000	(2,187)	—	547,813
6.00% 2022 Notes	1,150,000	(5,501)	—	1,144,499
6.50% 2024 Notes	1,200,000	(6,866)	—	1,193,134
6.50% 2025 Notes	750,000	(3,505)	3,636	750,131
6.375% 2026 Notes	950,000	(7,798)	—	942,202
6.875% 2026 Notes	500,000	(5,616)	(3,605)	490,779
	12,699,932	(101,170)	(20,999)	12,577,763
Less current portion	76,427	(610)	—	75,817
Long-term debt	$ 12,623,505	$ (100,560)	$ (20,999)	$ 12,501,946

Trade Receivable Securitization Facility

During fiscal 2014, the Company established a trade receivable securitization facility (the “Securitization Facility”). The Securitization Facility effectively increases the Company’s borrowing capacity depending on the amount of the domestic operations’ trade accounts receivable. The Securitization Facility includes the right for the Company to exercise annual one year extensions as long as there have been no termination events as defined by the agreement. The Company uses the proceeds from the Securitization Facility as an alternative to other forms of debt, effectively reducing borrowing costs. On July 30, 2019, the Company amended the Securitization Facility to extend the maturity date to July 31, 2020. As of September 30, 2019, the Company has borrowed $350 million under the Securitization Facility, which bears interest at a rate of 0.9% plus LIBOR. At September 30, 2019, the applicable interest rate was 2.94%. The Securitization Facility is collateralized by substantially all of the Company’s domestic operations’ trade accounts receivable.

Issuance of Senior Secured Notes due 2026

On January 30, 2019, the Company entered into a purchase agreement in connection with a private offering of $3.8 billion aggregate principal amount of 6.25% senior secured notes due 2026. In addition, on February 1, 2019, the Company entered into a purchase agreement in connection with a private offering of $200 million aggregate principal amount of 6.25% senior secured notes due 2026 (herein the "2026 Secured Notes"). All $4.0 billion aggregate principal amount of the 2026 Secured Notes constituted a single class and were issued under a single indenture. The notes in the $3.8 billion secured notes offering were issued at a price of 100% of their principal amount and the notes in the $200 million secured notes offering were issued at a price of 101% of their principal amount. The 2026 Secured Notes are guaranteed, with certain exceptions, by TransDigm Group, TransDigm UK and all of TransDigm Inc.’s existing U.S. subsidiaries on a senior secured basis.

The 2026 Secured Notes bear interest at a rate of 6.25% per annum, which accrues from February 13, 2019 and is payable semiannually in arrears on March 15th and September 15th of each year, commencing on September 15, 2019. The 2026 Secured Notes mature on March 15, 2026, unless earlier redeemed or repurchased, and are subject to the terms and conditions set forth in the Secured Notes Indenture.

In addition to the premium of $2.0 million capitalized upon the issuance of the $200 million issuance of the 2026 Senior Notes, the Company capitalized $65.6 million and expensed $0.8 million of debt issuance costs associated with the issuance of the 2026 Senior Secured Notes during the fiscal year ended September 30, 2019.

Issuance of Senior Subordinated Notes due 2027

On February 1, 2019, the Company entered into a purchase agreement in connection with a private offering of $550 million in new 7.50% senior subordinated notes due 2027 (herein the "2027 Notes"). The 2027 Notes were issued pursuant to an indenture, dated as of February 13, 2019, among TransDigm, as issuer, TD Group, TD UK and the other subsidiaries of TransDigm named therein, as guarantors, and The Bank of New York Mellon Trust Company, N.A., as trustee.

The 2027 Notes bear interest at the rate of 7.50% per annum, which accrues from February 13, 2019 and is payable in arrears on March 15th and September 15th of each year, commencing on September 15, 2019. The 2027 Notes mature on March 15, 2027, unless earlier redeemed or repurchased, and are subject to the terms and conditions set forth in the indenture.

The Company capitalized $5.8 million of debt issuance costs associated with the 2027 Notes during the fiscal year ended September 30, 2019.

Repurchase of Senior Subordinated Notes due 2020

On February 13, 2019, the Company announced a cash tender offer for any and all of its 2020 Notes outstanding. On March 15, 2019, the Company redeemed the principal amount of $550 million, plus accrued interest of approximately $12.6 million.

The Company wrote off $1.7 million in unamortized debt issuance costs during the fiscal year ended September 30, 2019 in conjunction with the redemption of the 2020 Notes.

Amendment No. 6 to the Second Amended and Restated Credit Agreement

On March 14, 2019, the Company entered into Amendment No. 6 to the Second Amended and Restated Credit Agreement (herein, "Amendment No. 6").

Under the terms of Amendment No. 6, certain existing lenders increased the revolving commitments, including $52.1 million in multicurrency revolving commitments, in an aggregate principal amount of $160 million, to a total revolving commitments capacity of $760 million. The revolving commitments consist of two tranches which include up to $151.5 million of multicurrency revolving commitments. The terms and conditions that apply to the revolving credit facility, other than the additional revolving credit commitments, are substantially the same as the terms and conditions that applied to the revolving credit facility immediately prior to Amendment No. 6.

At September 30, 2019, the Company had $41.5 million in letters of credit outstanding, and $718.5 million of borrowings available under the revolving commitments, subject to restrictions under existing debt covenants. The Company utilizes letters of credit to back certain payment and performance obligations.

Government Refundable Advances

Government refundable advances consist of payments received from the Canadian government to assist in research and development related to commercial aviation. The requirement to repay this advance is solely based on year-over-year commercial aviation revenue growth at CMC Electronics, which is a subsidiary of TransDigm (acquired via the Esterline acquisition). These obligations were assumed in connection with the Esterline acquisition and the balance was $39.2 million at September 30, 2019.

Obligations under Capital Leases

The Company leases certain buildings and equipment under capital leases. These obligations were assumed in connection with the Esterline acquisition and the present value of the minimum capital lease payments, net of the current portion, was a balance of $49.9 million at September 30, 2019.

Term Loans

As of September 30, 2019 and 2018, TransDigm had $7,523.5 million and $7,599.9 million in fully drawn term loans and $760 million and $600 million in revolving commitments. The term loans consist of three tranches as follows (in millions):

			Aggregate Principal as of September 30,	
Term Loan Facility	**Maturity Date**	**Interest Rate**	**2019**	**2018**
Tranche E	May 30, 2025	LIBO rate + 2.5%	$ 2,221.2	$ 2,243.7
Tranche F	June 9, 2023	LIBO rate + 2.5%	$ 3,524.1	$ 3,559.9
Tranche G	August 22, 2024	LIBO rate + 2.5%	$ 1,778.2	$ 1,796.3

The interest rates per annum applicable to all of the existing tranches of term loans are, at TransDigm's option, equal to either an alternate base rate or an adjusted LIBO rate for one, two, three or six-month (or to the extent agreed to by each relevant lender, nine or twelve-month) interest periods chosen by TransDigm, in each case plus an applicable margin percentage. The adjusted LIBO rate is not subject to a floor. At September 30, 2019 and 2018, the applicable interest rates for all existing tranches were 4.83% and 4.58%, respectively.

Debt Issuance Costs, Premiums and Discounts

During the fiscal year ended September 30, 2019, the Company recorded refinancing costs of $3.0 million representing the repurchase of the $550 million 2020 Senior Subordinated Notes and issuance of the $4.0 billion 2026 Senior Secured Notes. During the fiscal year ended September 30, 2018, the Company recorded refinancing costs of $6.4 million representing the refinancing of tranche D, E, F & G term loans, and issuance of the $500 million 6.875% Senior Subordinated Notes. During the fiscal year ended September 30, 2017, the Company recorded refinancing costs of $39.8 million representing debt issuance costs and premium expensed in conjunction with the new tranche G term loans, the refinancing of the tranche C term loans, and additional $300 million tack-on to the 6.375% Notes.

Interest Rate Swap and Cap Agreements

See Note 21, "Derivatives and Hedging Activities," for information about how our interest rate swap and cap agreements are used to manage interest rate risk associated with floating-rate borrowings under our credit facilities.

Senior Subordinated Notes

The Notes are subordinated to all of TransDigm's existing and future senior debt, rank equally with all of its existing and future senior subordinated debt and rank senior to all of its future debt that is expressly subordinated to the Notes. The Notes are guaranteed on a senior subordinated unsecured basis by TD Group and its 100%-owned domestic subsidiaries named in the indentures. The guarantees of the Notes are subordinated to all of the guarantors' existing and future senior debt, rank equally with all of their existing and future senior subordinated debt and rank senior to all of their future debt that is expressly subordinated to the guarantees of the Notes. See Note 27, "Supplemental Guarantor Information," for further details. The Notes are structurally subordinated to all of the liabilities of TD Group's non-guarantor subsidiaries. The Notes contain many of the restrictive covenants included in the Restated Credit Agreement. TransDigm is in compliance with all the covenants contained in the Notes.

At September 30, 2019, future maturities of long-term debt are as follows (in thousands):

Fiscal years ended September 30,		
2020	$	80,951
2021		81,979
2022[1]		1,232,200
2023		3,462,528
2024		2,933,675
Thereafter		8,921,274
	$	16,712,607

[1] On October 29, 2019, the Company entered into a purchase agreement in connection with a private offering of $2.65 billion aggregate principal amount in 5.50% senior subordinated notes in which part of the proceeds will be used to repurchase its 2022 Notes in the first quarter of fiscal 2020. Refer to Note 26, "Subsequent Events" to our consolidated financial statements included herein for further details.

Subsequent Event - Cash Tender and Redemption of 2022 Notes

On October 29, 2019, the Company entered into a purchase agreement in connection with a private offering of $2.65 billion aggregate principal amount in 5.50% senior subordinated notes due November 15, 2027. The settlement of the debt financing transaction occurred on November 13, 2019. The notes were issued at a price of 100% of their principal amount. The Company will use a portion of the net proceeds from the offering of the notes to cash tender and redeem all of its outstanding (aggregate principal amount of $1.15 billion) 2022 Notes.

13. RETIREMENT PLANS

The Company maintains certain non-contributory defined benefit pension plans. The plans provide benefits of stated amounts for each year of service. The Company's funding policy is to contribute actuarially determined amounts allowable under tax and statutory regulations for the qualified plans. The Company uses a September 30th measurement date for its defined benefit pension plans. In addition, the Company makes actuarially computed contributions to these plans as necessary to adequately fund benefits. The Company's funding policy is consistent with the minimum funding requirements of ERISA.

As part of the Esterline acquisition, the Company acquired the Esterline defined benefit plan that covers certain U.S. employees. Refer to Note 2, "Acquisitions and Divestitures," for further discussion of the Esterline acquisition. Under the Esterline defined benefit plan, pension benefits are earned under a cash balance formula with annual pay credits ranging from 2% to 6% effective January 1, 2003. Prior to 2003, pension benefits are based on years of service and five-year average compensation for the highest five consecutive years' compensation during the last ten years of employment. Participants elected either to continue earning benefits under the prior plan formula or to earn benefits under the cash balance formula. Effective January 1, 2003, all new participants were enrolled in the cash balance formula. Additionally, as part of the Esterline acquisition, the Company acquired an unfunded supplemental retirement plan for key Esterline executives providing for periodic payments upon retirement. The Company also sponsors other retirement benefit plans for certain employees in the U.S. Other retirement benefit plans are non-contributory health care and life insurance plans.

The Company sponsors a number of non-U.S. defined benefit pension plans primarily in Canada, Belgium, France, Germany and the United Kingdom. These defined benefit plans generally provide benefits to employees based on formulas recognizing length of service and earnings. The Company also sponsors other retirement benefit plans for its employees in Canada. Other retirement benefit plans are non-contributory health care and life insurance plans.

The accumulated benefit obligation and projected benefit obligation for the U.S. plans are $365.6 million and $378.8 million, respectively, with plan assets of $317.9 million as of September 30, 2019. The underfunded status for the Company's U.S. plans is $61.0 million at September 30, 2019, of which $22.1 million is for the acquired unfunded supplemental retirement plan for the former Esterline key executives. Contributions to the Company's qualified and non-qualified U.S. plans totaled $1.4 million and $0.9 million, respectively, in fiscal 2019. Contributions to the Company's qualified U.S. plans totaled $1.6 million in fiscal 2018. The Company had no unqualified U.S. plans in fiscal 2018. There is an expected funding requirement of $0.7 million for fiscal 2020 for the qualified U.S. pension plans maintained by the Company.

The accumulated benefit obligation and projected benefit obligation for the non-U.S. plans are $258.2 million and $270.0 million, respectively, with plan assets of $233.6 million as of September 30, 2019. The underfunded status for these non-U.S. plans is $36.4 million at September 30, 2019. Contributions to the non-U.S. plans totaled $2.7 million and $1.0 million in fiscal 2019 and 2018, respectively. The expected funding requirement for fiscal 2020 for the non-U.S. plans is $5.3 million.

	U.S. Defined Benefit Pension Plans		**Non-U.S. Defined Benefit Pension Plans**	
Principal assumptions as of year end:	**2019**	**2018**	**2019**	**2018**
Discount rate	3.03%	3.96%	2.20%	2.68%
Rate of increase in future compensation levels	4.48%	N/A	2.98%	3.22%
Assumed long-term rate of return on plan assets	6.00%	6.50%	4.16%	4.3%

	U.S. Post-Retirement Pension Plans		**Non-U.S. Post Retirement Pension Plans**	
Principal assumptions as of year end:	**2019**	**2018**	**2019**	**2018**
Discount rate	2.86%	3.99%	2.68%	N/A
Initial weighted average health care trend rate	7.46%	8.50%	5.60%	N/A
Ultimate weighted average health care trend rate	6.00%	6.00%	4.10%	N/A

The Company uses discount rates developed from a yield curve established from high-quality corporate bonds and matched to plan-specific projected benefit payments. Although future changes to the discount rate are unknown, had the discount rate increased or decreased by 25 basis points, pension liabilities in total would have decreased $19.2 million or increased $20.3 million, respectively. Had the discount rate increased or decreased by 25 basis points, fiscal 2019 net periodic benefit cost for the pension plans would have remained approximately the same or decreased $0.1 million, respectively. In determining the expected long-term rate of return on the defined benefit pension plans' assets, the Company considers the historical rates of return, the nature of investments, the asset allocation, and expectations of future investment strategies. Had the expected return on assets increased or decreased by 25 basis points, fiscal 2019 net periodic benefit cost would have decreased $0.8 million or increased $0.8 million, respectively. Management is not aware of any legislative or other initiatives or circumstances that will significantly impact the Company's pension obligations in fiscal 2020.

The Company's health care trend rate was based on the experience of its plans and expectations for the future. A 100 basis points increase in the health care trend rate would increase the post-retirement benefit obligation by $1.5 million. A 100 basis points decrease in the health care trend rate would decrease the post-retirement benefit obligation by $1.3 million. Assuming all other assumptions are held constant, the estimated effect on fiscal 2019 post-retirement benefit expense from a hypothetical 100 basis points increase or decrease in the health care trend rate would not have a material effect on our post-retirement benefit expense.

Plan assets are invested in a diversified portfolio of equity and debt securities consisting primarily of common stocks, bonds and government securities. The objective of these investments is to maintain sufficient liquidity to fund current benefit payments and achieve targeted risk-adjusted returns. Management periodically reviews allocations of plan assets by investment type and evaluates external sources of information regarding the long-term historical returns and expected future returns for each investment type.

Allocations by investment type are as follows**:**

		Actual	
Plan assets allocation as of fiscal year end:	**Target**	**2019**	**2018**
Equity securities	35 - 70%	35.1%	27.1%
Debt securities	30 - 65%	59.5%	72.5%
Cash	—%	5.4%	0.4%
Total		100.0%	100.0%

The following table presents the fair value of the Company's pension plan assets as of September 30, 2019, by asset category segregated by level within the fair value hierarchy, as described in Note 20, "Fair Value Measurements" (in thousands):

	Fair Value Hierarchy		
	Level 1	**Level 2**	**Total**
Investments measured at fair value by category:			
Equity Funds:(1)			
U.S. Equity Securities	$ 3,472	$ —	$ 3,472
Non-U.S. Equity Securities	47,903	—	47,903
Fixed Income Securities:(2)			
Non-U.S. Foreign Commercial and Government Bonds	—	86,281	86,281
Cash and Cash Equivalents(3)	29,588	—	29,588
	$ 80,963	$ 86,281	$ 167,244
Investments measured at net asset value by category:(4)			
Equity Funds:(1)			
Commingled Trust Funds - Non-U.S. Securities			142,132
Fixed Income Securities:(2)			
U.S. Government Bonds and Securities			86,214
U.S Corporate Bonds			108,135
Non-U.S. Corporate Bonds			17,449
Non-U.S. Foreign Commercial and Government Bonds			30,330
Total			$ 551,504

The following table presents the fair value of the Company's pension plan assets as of September 30, 2018, by asset category segregated by level within the fair value hierarchy, as described in Note 20, "Fair Value Measurements" (in thousands):

	Fair Value Hierarchy		
	Level 1	**Level 2**	**Total**
Investments measured at fair value by category:			
Equity Funds:[1]			
U.S. Equity Securities	$ 3,545	$ —	$ 3,545
Non-U.S. Equity Securities	4,959	—	4,959
Cash and Cash Equivalents[3]	295	—	295
	$ 8,799	$ —	$ 8,799
Investments measured at net asset value by category:[4]			
Equity Funds:[1]			
Commingled Trust Funds - Non-U.S. Securities			10,056
Fixed Income Securities:[2]			
U.S Corporate Bonds			3,710
Non-U.S. Corporate Bonds			16,759
Non-U.S. Foreign Commercial and Government Bonds			29,131
Total			$ 68,455

(1) Level 1 Equity Securities are actively traded on U.S. and non-U.S. exchanges and are either valued using the market approach at quoted market prices on the measurement date or at the net asset value of the shares held by the plan on the measurement date based on quoted market prices.

(2) Level 2 fixed income securities are primarily valued using the market approach at either quoted market prices, pricing models that use observable market data, or bids provided by independent investment brokerage firms.

(3) Cash and cash equivalents include cash which is used to pay benefits and cash invested in a short-term investment fund that holds securities with values based on quoted market prices, but for which the funds are not valued on quoted market basis.

(4) These investments are valued at the net asset value ("NAV") of units held. The NAV is used to estimated fair value and is based on the fair value of the underlying investments held by the fund less its liability.

Net periodic pension cost for the Company's defined benefit plans at the end of each fiscal year consisted of the following (in thousands):

	Defined Benefit Pension Plans					
	2019		2018		2017	
	U.S. Pension Plans	Non-U.S. Pension Plans	U.S. Pension Plans	Non-U.S. Pension Plans	U.S. Pension Plans	Non-U.S. Pension Plans
Components of Net Periodic Cost						
Service cost	$ 4,486	$ 3,486	$ 293	$ 545	$ 304	$ 760
Interest cost	7,434	4,806	778	1,798	1,064	1,721
Expected return on plan assets	(10,339)	(6,267)	(517)	(2,334)	(463)	(2,550)
Settlements	—	70	—	—	—	—
Amortization of prior service cost	62	14	36	—	—	—
Amortization of actuarial loss (gain)	337	221	226	559	630	1,196
Amortization of transition obligation	—	—	209	—	314	—
Net periodic cost (benefit)	$ 1,980	$ 2,330	$ 1,025	$ 568	$ 1,849	$ 1,127

	Post-Retirement Pension Plans					
	2019		2018		2017	
	U.S. Pension Plans	Non-U.S. Pension Plans	U.S. Pension Plans	Non-U.S. Pension Plans	U.S. Pension Plans	Non-U.S. Pension Plans
Components of Net Periodic Cost						
Service cost	$ 5	$ 208	$ 5	$ —	$ 5	$ —
Interest cost	40	227	31	—	42	—
Expected return on plan assets	—	—	—	—	—	—
Settlements	—	—	—	—	—	—
Amortization of prior service cost	24	—	12	—	—	—
Amortization of actuarial (gain) loss	(53)	—	(42)	—	(117)	—
Net periodic cost (benefit)	$ 16	$ 435	$ 6	$ —	$ (70)	$ —

The funded status of the defined benefit pension and post-retirement plans at the end of fiscal 2019 and 2018 were as follows (in thousands):

	Defined Benefit Pension Plans				Post-Retirement Pension Plans			
	September 30, 2019		September 30, 2018		September 30, 2019		September 30, 2018	
	U.S. Pension Plans	Non-U.S. Pension Plans	U.S. Pension Plans	Non-U.S. Pension Plans	U.S. Pension Plans	Non-U.S. Pension Plans	U.S. Pension Plans	Non-U.S. Pension Plans
Benefit Obligations								
Beginning balance	$ 18,683	$ 72,540	$ 19,966	$ 79,495	$ 957	$ —	$ 1,002	$ —
Currency translation adjustment	—	(3,973)	—	(1,981)	—	138	—	—
Service cost	4,486	3,486	277	578	5	208	5	—
Interest cost	7,434	4,806	666	1,821	40	227	31	—
Plan participant contributions	—	380	—	60	—	—	—	—
Actuarial (gain) loss	43,368	28,127	(660)	(5,387)	176	1,058	(136)	—
Acquisitions	318,161	171,377	—	—	196	12,459	—	—
Other adjustments	440	505	—	—	—	—	111	—
Benefits paid	(13,726)	(7,239)	(1,566)	(2,046)	(90)	(315)	(56)	—
Ending balance	$ 378,846	$ 270,009	$ 18,683	$ 72,540	$ 1,284	$ 13,775	$ 957	$ —
Plan Assets - Fair Value								
Beginning balance	$ 8,655	$ 59,800	$ 8,006	$ 61,884	$ —	$ —	$ —	$ —
Currency translation adjustment	—	(2,719)	—	(1,572)	—	—	—	—
Realized and unrealized gain (loss) on plan assets	30,743	18,854	582	425	—	—	—	—
Plan participants contributions	—	380	—	60	—	—	—	—
Company contributions	2,300	2,726	1,633	1,049	90	315	56	—
Acquisitions	289,944	162,015	—	—	—	—	—	—
Other adjustments	—	(209)	—	—	—	—	—	—
Expenses paid	(20)	—	—	—	—	—	—	—
Benefits paid	(13,726)	(7,239)	(1,566)	(2,046)	(90)	(315)	(56)	—
Ending balance	$ 317,896	$ 233,608	$ 8,655	$ 59,800	$ —	$ —	$ —	$ —
Funded Status								
Fair value of plan assets	$ 317,896	$ 233,608	$ 8,655	$ 59,800	$ —	$ —	$ —	$ —
Benefit obligations	(378,846)	(270,009)	(18,683)	(72,540)	(1,284)	(13,775)	(957)	—
Net amount recognized	$ (60,950)	$ (36,401)	$ (10,028)	$ (12,740)	$ (1,284)	$ (13,775)	$ (957)	$ —
Amount Recognized on Consolidated Balance Sheet								
Non-current asset	$ —	$ 3,639	$ —	$ —	$ —	$ —	$ —	$ —
Current liability	(2,460)	(482)	(841)	(254)	(154)	(714)	(88)	—
Non-current liability	(58,490)	(39,558)	(9,187)	(12,486)	(1,130)	(13,061)	(869)	—
Net amount recognized	$ (60,950)	$ (36,401)	$ (10,028)	$ (12,740)	$ (1,284)	$ (13,775)	$ (957)	$ —
Amounts Recognized in Accumulated Other Comprehensive Income								
Net actuarial loss (gain)	$ 27,809	$ 23,533	$ 5,183	$ 9,416	$ (388)	$ 1,060	$ (617)	$ —
Prior service cost	766	875	368	185	192	—	216	—
Ending balance	$ 28,575	$ 24,408	$ 5,551	$ 9,601	$ (196)	$ 1,060	$ (401)	$ —

The accumulated benefit obligation for all pension plans was $623.8 million at September 30, 2019 and $89.9 million at September 30, 2018.

During fiscal year 2020, the Company expects to recognize amortization of net actuarial losses and prior service credit of $1.5 million and $0.2 million, respectively, in net periodic benefit cost.

Estimated future benefit payments expected to be paid from the pension and post-retirement benefit plans or from the Company's assets are as follows (in thousands):

Fiscal Year		
2020	$	34,275
2021		34,700
2022		35,697
2023		37,305
2024		38,059
2025 - 2029		201,998

Defined Contribution Plans

The Company sponsors certain defined contribution employee savings plans that cover substantially all of the Company's employees. Under certain plans, the Company contributes a percentage of employee compensation and matches a portion of employee contributions. The cost recognized for such contributions for the fiscal years ended September 30, 2019, 2018 and 2017 was approximately $24.5 million, $14.9 million and $14.6 million, respectively.

14. INCOME TAXES

The Company's income from continuing operations before income taxes includes the following components for the periods shown below (in thousands):

	Fiscal Years Ended September 30,		
	2019	2018	2017
United States	$ 877,949	$ 826,539	$ 698,201
Foreign	184,916	159,018	139,229
	$ 1,062,865	$ 985,557	$ 837,430

The Company's income tax provision on income from continuing operations consists of the following for the periods shown below (in thousands):

	Fiscal Years Ended September 30,		
	2019	2018	2017
Current			
Federal	$ 153,704	$ 136,651	$ 179,884
State	14,911	11,771	8,596
Foreign	53,720	27,239	21,327
	222,335	175,661	209,807
Deferred	(349)	(151,640)	(918)
	$ 221,986	$ 24,021	$ 208,889

The differences between the income tax provision on income from continuing operations at the federal statutory income tax rate and the tax provision shown in the accompanying consolidated statements of income for the periods shown below are as follows (in thousands):

	Fiscal Years Ended September 30,		
	2019	2018	2017
Tax at statutory rate of 21% (24.5% for fiscal 2018 and 35% for fiscal 2017)	$ 223,202	$ 241,853	$ 293,129
Stock compensation	(57,519)	(50,796)	(50,314)
Domestic manufacturing deduction	—	(15,091)	(17,832)
US tax reform[1]	—	(146,380)	—
Foreign rate differential	2,136	(13,770)	(29,685)
Foreign derived intangible income	(15,886)	—	—
Foreign tax credits	(18,370)	(2,939)	—
Changes in valuation allowances impacting results[2]	66,101	—	—
Other—net	22,322	11,144	13,591
Income tax provision	$ 221,986	$ 24,021	$ 208,889

(1) On December 22, 2017, the Tax Cuts and Jobs Act (the "Act") was enacted. The Act reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings from certain foreign subsidiaries that were previously deferred as well as other changes. We recorded tax benefits of $176.4 million related to the remeasurement of our net U.S. deferred tax liabilities to reflect the reduction in the corporate tax rate. We also recorded tax expense of $30.0 million related to the one-time transition tax.

(2) Primarily relates to the Company's business interest expense limitation pursuant to IRC §163(j) as modified by the Act. Such provision, as modified, is effective for the Company beginning in fiscal 2019. In general, the deduction for interest expense is limited to 30% of the sum of the Company's adjusted taxable income (ATI) and its business interest income. Interest expense disallowed by such limitation, in a taxable year, may be carried forward indefinitely. Based upon available evidence, a valuation allowance was recorded for the resulting carryforward to reflect the Company's belief that is more likely than not that that such deferred tax asset will not be realized.

The components of the deferred taxes consist of the following at September 30 (in thousands):

	2019	2018
Deferred tax liabilities:		
Intangible assets	$ (709,561)	$ (469,939)
Property, plant and equipment	(63,603)	(26,615)
Unremitted foreign earnings	(7,310)	(4,488)
Employee benefits	122,777	73,906
U.S. interest expense limitation	64,968	—
Loss contract reserves	62,513	12,670
Net operating losses	58,047	46,487
Interest rate swaps and caps	54,643	(20,052)
Inventories	39,240	20,916
Non-U.S. income tax credits	23,746	289
U.S. income tax credits	16,850	3,114
Environmental reserves	9,636	8,551
Product warranty reserves	8,394	4,471
Other	11,338	(1,557)
Total	(308,322)	(352,247)
Add: Valuation allowance	(117,660)	(47,249)
Total net deferred tax liabilities	$ (425,982)	$ (399,496)

At September 30, 2019, the Company has United Kingdom net operating loss carryforwards of approximately $12.3 million, German net operating loss carryforwards of approximately $14.2 million, Belgium net operating loss carryforwards of $39.5 million, France net operating loss carryforwards of $3.6 million and state net operating loss carryforwards of approximately $1,342.7 million that expire in various years from 2019 to 2039. The Company had U.S. and non-U.S. tax credit carryforwards of $40.6 million that expire beginning in 2025.

The deferred tax assets for the interest expense limitation, net operating losses, and tax credit carryforwards are reduced by a valuation allowance for the amount of such asset that the Company believes will not be realized.

The Company and its subsidiaries file income tax returns in the U.S. federal jurisdiction and various state and local jurisdictions, as well as foreign jurisdictions located in Belgium, Canada, China, France, Germany, Hong Kong, Hungary, India, Israel, Japan, Malaysia, Mexico, Norway, Singapore, Spain, Sri Lanka, Sweden and the United Kingdom. The Company is no longer subject to U.S. federal examinations for years before fiscal 2015.The Company is currently under examination for its federal income taxes in the U.S. for fiscal 2016, in Belgium for fiscal(s) 2016, 2017, and 2018, in Canada for fiscal(s) 2013, 2014, and 2015, and in France for fiscal(s) 2015, 2016, 2017, and 2018. The Company expects the examination to be completed during fiscal 2020. In addition, the Company is subject to state income tax examinations for fiscal years 2009 and later.

At September 30, 2018, the Company had not completed its accounting related to the Act. All provisional amounts were based on reasonable estimates using the best information available at the time. During the first quarter of fiscal 2019, the Company completed its accounting related to the Act. Such completion did not have a material impact on the Company's Consolidated Financial Statements.

Other provisions of the Act became effective for the Company in fiscal 2019. The Foreign-Derived Intangible Income ("FDII") provision effectively applies a lower U.S. tax rate to intangible income derived from serving non-U.S. markets. Conversely, the Global Intangible Low-Taxed Income ("GILTI") provision requires the Company to subject to U.S. taxation the portion of its earnings, from foreign subsidiaries that exceed an allowable return. The Company has made an accounting policy election to treat GILTI as a current year tax expense in the period in which it is incurred. We, therefore, have not provided for any deferred income tax impacts of GILTI in our consolidated financial statements for the fiscal year ended September 30, 2019.

The Act's one-time repatriation tax and GILTI effectively taxed the undistributed earnings previously deferred from U.S. income taxes. We have provided for foreign withholding taxes in jurisdictions in which we are not considered definitely reinvested, however, such amounts are not significant.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

	2019	2018
Balance at October 1	$ 14,080	$ 8,655
Additions based on tax positions related to the prior year	25,936	4,637
Additions based on tax positions related to the current year	422	2,390
Reductions based on tax positions related to the prior year	(2,691)	(100)
Settlement with tax authorities	—	(66)
Lapse in statute of limitations	(1,238)	(1,436)
Balance at September 30	$ 36,509	$ 14,080

Unrecognized tax benefits at September 30, 2019 and 2018, the recognition of which would have an effect on the effective tax rate for each fiscal year, amounted to $31.4 million and $14.1 million, respectively. The Company classifies all income tax related interest and penalties as income tax expense, which were not significant for the years ended September 30, 2019 and 2018. As of September 30, 2019 and 2018, the Company accrued $5.0 million and $1.9 million, respectively, for the potential payment of interest and penalties. The Company anticipates no significant changes to its total unrecognized tax benefits through fiscal 2020.

15. ENVIRONMENTAL LIABILITIES

Our operations and facilities are subject to a number of federal, state, local and foreign environmental laws and regulations that govern, among other things, discharges of pollutants into the air and water, the generation, handling, storage and disposal of hazardous materials and wastes, the remediation of contamination and the health and safety of our employees. Environmental laws and regulations may require that the Company investigate and remediate the effects of the release or disposal of materials at sites associated with past and present operations. Certain facilities and third-party sites utilized by the Company have been identified as potentially responsible parties under the federal superfund laws and comparable state laws. The Company is currently involved in the investigation and remediation of a number of sites under applicable laws.

Estimates of the Company's environmental liabilities are based on current facts, laws, regulations and technology. These estimates take into consideration the Company's prior experience and professional judgment of the Company's environmental advisors. Estimates of the Company's environmental liabilities are further subject to uncertainties regarding the nature and extent of site contamination, the range of remediation alternatives available, evolving remediation standards, imprecise engineering evaluations and cost estimates, the extent of corrective actions that may be required and the number and financial condition of other potentially responsible parties, as well as the extent of their responsibility for the remediation.

Accordingly, as investigation and remediation proceed, it is likely that adjustments in the Company's accruals will be necessary to reflect new information. The amounts of any such adjustments could have a material adverse effect on the Company's results of operations or cash flows in a given period. Based on currently available information, however, the Company does not believe that future environmental costs in excess of those accrued with respect to sites for which the Company has been identified as a potentially responsible party are likely to have a material adverse effect on the Company's financial condition.

Environmental liabilities are recorded when the liability is probable and the costs are reasonably estimable, which generally is not later than at completion of a feasibility study or when the Company has recommended a remedy or has committed to an appropriate plan of action. The Company also takes into consideration the estimated period of time in which payments will be required. The liabilities are reviewed periodically and, as investigation and remediation proceed, adjustments are made as necessary. Liabilities for losses from environmental remediation obligations do not consider the effects of inflation and anticipated expenditures are not discounted to their present value. The liabilities are not offset by possible recoveries from insurance carriers or other third parties, but do reflect anticipated allocations among potentially responsible parties at federal superfund sites or similar state-managed sites, third party indemnity obligations, and an assessment of the likelihood that such parties will fulfill their obligations at such sites.

The Company's consolidated balance sheets includes current environmental remediation obligations at September 30, 2019 and 2018 of $9.4 million and $7.3 million classified as a component of accrued liabilities, respectively, and non-current environmental remediation obligations at September 30, 2019 and 2018 of $32.7 million and $31.8 million classified as a component of other non-current liabilities, respectively.

16. CAPITAL STOCK

TD Group consists of 224,400,000 shares of $.01 par value common stock and 149,600,000 shares of $.01 par value preferred stock. The total number of shares of common stock issued at September 30, 2019 and 2018 was 57,623,311 and 56,895,686, respectively. The total number of shares held in treasury at September 30, 2019 and 2018 was 4,161,326. There were no shares of preferred stock outstanding at September 30, 2019 and 2018. The terms of the preferred stock have not been established.

On November 8, 2017, our Board of Directors, authorized a stock repurchase program permitting repurchases of our outstanding shares not to exceed $650 million in the aggregate, subject to any restrictions specified in the Credit Agreement and/or Indentures governing the existing Notes. No repurchases were made under the program during the fiscal years ended September 30, 2019 and 2018. As of September 30, 2019, $650 million in repurchases are allowable under the program subject to any restrictions specified in the Credit Agreement and/or Indentures governing the existing Notes.

17. SEGMENTS

The Company's businesses are organized and managed in three reporting segments: Power & Control, Airframe and Non-aviation.

The Power & Control segment includes operations that primarily develop, produce and market systems and components that predominately provide power to or control power of the aircraft utilizing electronic, fluid, power and mechanical motion control technologies. Major product offerings include mechanical/electro-mechanical actuators and controls, ignition systems and engine technology, specialized pumps and valves, power conditioning devices, specialized AC/DC electric motors and generators, databus and power controls, advanced sensor products, switches and relay panels, high performance hoists, winches and lifting devices and cargo loading and handling systems. Primary customers of this segment are engine and power system and subsystem suppliers, airlines, third party maintenance suppliers, military buying agencies and repair depots. Products are sold in the original equipment and aftermarket market channels.

The Airframe segment includes operations that primarily develop, produce and market systems and components that are used in non-power airframe applications utilizing airframe and cabin structure technologies. Major product offerings include engineered latching and locking devices, rods and locking devices, engineered connectors and elastomers, cockpit security components and systems, aircraft audio systems, specialized lavatory components, seat belts and safety restraints, engineered interior surfaces and related components, advanced displays, thermal protection, lighting and control technology, military personnel parachutes and cargo delivery systems. Primary customers of this segment are airframe manufacturers and cabin system suppliers and subsystem suppliers, airlines, third party maintenance suppliers, military buying agencies and repair depots. Products are sold in the original equipment and aftermarket market channels.

The Non-aviation segment includes operations that primarily develop, produce and market products for non-aviation markets. Major product offerings include seat belts and safety restraints for ground transportation applications, mechanical/electro-mechanical actuators and controls for space applications, hydraulic/electromechanical actuators and fuel valves for land based gas turbines, and refueling systems for heavy equipment used in mining, construction and other industries and turbine controls for the energy and oil and gas markets. Primary customers of this segment are off-road vehicle suppliers and subsystem suppliers, child restraint system suppliers, satellite and space system suppliers, manufacturers of heavy equipment used in mining, construction and other industries and turbine original equipment manufacturers, gas pipeline builders and electric utilities.

The primary measurement used by management to review and assess the operating performance of each segment is EBITDA As Defined. The Company defines EBITDA As Defined as earnings before interest, taxes, depreciation and amortization plus certain non-operating items recorded as corporate expenses including refinancing costs, acquisition-related costs, transaction-related costs, foreign currency gains and losses, and non-cash compensation charges incurred in connection with the Company’s stock incentive plans. Acquisition-related costs represent accounting adjustments to inventory associated with acquisitions of businesses and product lines that were charged to cost of sales when the inventory was sold; costs incurred to integrate acquired businesses and product lines into the Company’s operations, facility relocation costs and other acquisition-related costs; transaction-related costs comprising deal fees; legal, financial and tax diligence expenses and valuation costs that are required to be expensed as incurred and other acquisition accounting adjustments.

EBITDA As Defined is not a measurement of financial performance under GAAP. Although the Company uses EBITDA As Defined to assess the performance of its business and for various other purposes, the use of this non-GAAP financial measure as an analytical tool has limitations, and it should not be considered in isolation or as a substitute for analysis of the Company’s results of operations as reported in accordance with GAAP.

The Company’s segments are reported on the same basis used internally for evaluating performance and for allocating resources. The accounting policies for each segment are the same as those described in the summary of significant accounting policies in the Company’s consolidated financial statements. Intersegment sales and transfers are recorded at values based on market prices, which creates intercompany profit on intersegment sales or transfers that is eliminated in consolidation. Intersegment sales were immaterial for the periods presented below. Certain corporate-level expenses are allocated to the operating segments.

The Esterline businesses were acquired during the second quarter of fiscal 2019 and preliminarily assessed as a separate segment of the Company. During the third quarter of fiscal 2019, the Esterline businesses were integrated into TransDigm's existing Power & Control, Airframe and Non-aviation segments.

The following table presents net sales by reportable segment (in thousands):

	Fiscal Years Ended September 30, 2019	2018	2017
Net sales to external customers			
Power & Control			
Commercial OEM	$ 547,462	$ 498,654	$ 460,444
Commercial Aftermarket	710,099	665,663	606,389
Defense	1,164,545	974,818	860,411
Esterline[1]	313,468	—	—
Total Power & Control	2,735,574	2,139,135	1,927,244
Airframe			
Commercial OEM	597,765	508,671	497,612
Commercial Aftermarket	759,697	701,110	630,382
Defense	389,426	321,161	314,079
Esterline[1]	582,520	—	—
Total Airframe	2,329,408	1,530,942	1,442,073
Total Non-aviation	158,221	141,049	134,969
	$ 5,223,203	$ 3,811,126	$ 3,504,286

[1] The sales market classifications associated with the acquired Esterline businesses are currently being assessed by TransDigm management to ensure the reported market classifications are in compliance with TransDigm policy and being computed consistently with that of the existing TransDigm legacy businesses. Therefore, the sales associated with the Esterline acquisition are excluded from the market classifications reported for the fiscal year ended September 30, 2019.

The following table reconciles EBITDA As Defined by segment to consolidated income from continuing operations before income taxes (in thousands):

	Fiscal Years Ended September 30, 2019	2018	2017
EBITDA As Defined			
Power & Control	$ 1,395,085	$ 1,114,464	$ 980,046
Airframe	1,062,679	759,253	726,630
Non-aviation	50,575	44,310	42,475
Total segment EBITDA As Defined	2,508,339	1,918,027	1,749,151
Unallocated corporate expenses	89,538	41,469	38,588
Total Company EBITDA As Defined	2,418,801	1,876,558	1,710,563
Depreciation and amortization	225,700	129,844	141,025
Interest expense - net	859,753	663,008	602,589
Acquisition-related costs	168,898	28,450	31,191
Stock compensation expense	93,362	58,481	45,524
Refinancing costs	3,013	6,396	39,807
Other, net	5,210	4,822	12,997
Income from continuing operations before income taxes	$ 1,062,865	$ 985,557	$ 837,430

The following table presents capital expenditures and depreciation and amortization by segment (in thousands):

	Fiscal Years Ended September 30,		
	2019	2018	2017
Capital expenditures			
Power & Control	$ 49,573	$ 38,762	$ 32,424
Airframe	48,027	32,028	34,526
Non-aviation	2,546	2,156	3,981
Corporate	1,445	395	82
	$ 101,591	$ 73,341	$ 71,013
Depreciation and amortization			
Power & Control	$ 98,366	$ 67,721	$ 85,681
Airframe	119,259	55,732	51,440
Non-aviation	6,280	5,276	2,745
Corporate	1,795	1,115	1,159
	$ 225,700	$ 129,844	$ 141,025

The following table presents total assets by segment (in thousands):

	September 30, 2019	September 30, 2018
Total assets		
Power & Control	$ 7,037,090	$ 5,698,524
Airframe	6,672,179	4,091,011
Non-aviation	261,841	234,770
Corporate	1,321,492	2,173,162
Assets of discontinued operations	962,129	—
	$ 16,254,731	$ 12,197,467

The Company's sales principally originate from the United States, and the Company's long-lived assets are principally located in the United States.

18. STOCK-BASED COMPENSATION

The Company's stock compensation plans are designed to assist the Company in attracting, retaining, motivating and rewarding key employees, directors or consultants, and promoting the creation of long-term value for stockholders by closely aligning the interests of these individuals with those of the Company's stockholders. The Company's stock compensation plans provide for the granting of stock options and other stock-based incentives.

Non-cash stock compensation expense recognized by the Company during the fiscal years ended September 30, 2019, 2018 and 2017 was $93.4 million, $58.5 million and $45.5 million, respectively.

The weighted-average grant date fair value of options granted during the fiscal years ended September 30, 2019, 2018 and 2017 was $114.43, $81.04 and $67.11, respectively.

Compensation expense is recognized based upon probability assessments of awards that are expected to vest in future periods. Such probability assessments are subject to revision and, therefore, unrecognized compensation expense is subject to future changes in estimate. As of September 30, 2019, there was approximately $103.0 million of total unrecognized compensation expense related to non-vested awards expected to vest, which is expected to be recognized over a weighted-average period of 2.4 years.

The fair value of the Company's employee stock options was estimated at the date of grant using a Black-Scholes option-pricing model with the following weighted average assumptions for all options granted during the fiscal years ended:

	Fiscal Years Ended September 30,		
	2019	2018	2017
Risk-free interest rate	2.33% to 3.03%	2.01% to 2.84%	1.56% to 2.01%
Expected life of options	5.5 years	5.2 years	5.0 years
Expected dividend yield of stock	—	—	—
Expected volatility of stock	25%	25%	25%

The risk-free interest rate is based upon the Treasury bond rates as of the grant date. The average expected life of stock-based awards is based on the Company's actual historical exercise experience. Expected volatility of stock was calculated using a rate based upon the historical volatility of TransDigm's common stock. Notwithstanding the special cash dividends declared and paid from time to time, the Company historically has not declared and paid regular cash dividends and does not anticipate declaring and paying regular cash dividends in future periods; thus, no dividend rate assumption is used.

The total fair value of options vested during fiscal years ended September 30, 2019, 2018 and 2017 was $37.7 million, $44.4 million and $42.9 million, respectively.

2019 Stock Option Plan

In August 2019, the Board of Directors of TD Group adopted a new stock option plan, which was subsequently approved by stockholders on October 3, 2019. The 2019 stock option plan permits TD Group to award stock options to our key employees, directors or consultants. The total number shares of TD Group common stock reserved for issuance or delivery under the 2019 stock option plan is 4,000,000, subject to adjustment in the event of any stock dividend or split, reorganization, recapitalization, merger, share exchange or any other similar corporate transaction or event. No shares have been issued from TD Group's 2019 stock option plan.

2014 Stock Option Plan

In July 2014, the Board of Directors of TD Group adopted the 2014 stock option plan, which was subsequently approved by stockholders on October 2, 2014. The 2014 stock option plan permits TD Group to award our key employees, directors or consultants stock options. The total number of shares of TD Group common stock reserved for issuance or delivery under the 2014 stock option plan is 5,000,000, subject to adjustment in the event of any stock dividend or split, reorganization, recapitalization, merger, share exchange or any other similar corporate transaction or event.

Performance Vested Stock Options—All of the options granted through September 30, 2019 under the 2014 stock option plan have been pursuant to an equity incentive program adopted by the Company in 2008. Under the 2008 equity incentive program, all of the options granted will vest based on the Company's achievement of established operating performance goals. The following table summarizes the activity, pricing and other information for the Company's performance vested stock-based award activity during the fiscal year ended September 30, 2019:

	Number of Options	Weighted-Average Exercise Price Per Option	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at September 30, 2018	2,113,278	$ 283.84		
Granted	1,184,680	393.32		
Exercised	(24,150)	251.22		
Forfeited	(105,350)	322.71		
Expired	(1,000)	303.90		
Outstanding at September 30, 2019	3,167,458	$ 323.73	8.3 years	$ 623,799,179
Expected to vest	1,820,010	$ 323.70	8.3 years	$ 358,483,056
Exercisable at September 30, 2019	824,797	$ 315.16	8.2 years	$ 169,504,031

At September 30, 2019, there were 1,797,892 remaining shares available for award under TD Group's 2014 stock option plan.

2006 Stock Incentive Plan

In conjunction with the consummation of the Company's initial public offering, a 2006 stock incentive plan was adopted by TD Group. In July 2008 and March 2011, the plan was amended to increase the number of shares available for issuance thereunder. TD Group reserved 8,119,668 shares of its common stock for issuance to key employees, directors or consultants under the plan. Awards under the plan were in the form of options, restricted stock or other stock-based awards. Options granted under the plan expire no later than the tenth anniversary of the applicable date of grant of the options, and have an exercise price of not less than the fair market value of our common stock on the date of grant. Restricted stock granted under the plan vested over three years. No restricted stock units remained outstanding as of September 30, 2018.

Performance Vested Stock Options—All of the options granted under the 2006 stock incentive plan have been pursuant to an equity incentive program adopted by the Company in 2008. Under the 2008 equity incentive program, all of the options granted vest based on the Company's achievement of established operating performance goals. The following table summarizes the activity, pricing and other information for the Company's performance vested stock-based award activity during the fiscal year ended September 30, 2019:

	Number of Options	Weighted-Average Exercise Price Per Option	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at September 30, 2018	3,878,127	$ 147.50		
Granted	—	—		
Exercised	(702,600)	107.90		
Forfeited	(41,505)	223.42		
Expired	—	—		
Outstanding at September 30, 2019	3,134,022	$ 155.34	3.9 years	$ 1,144,952,257
Expected to vest	141,080	$ 225.90	6.1 years	$ 41,586,446
Exercisable at September 30, 2019	2,995,342	$ 152.08	3.8 years	$ 1,104,053,108

The 2006 stock incentive plan expired on March 14, 2016 and no further shares were granted under the plan thereafter.

2003 Stock Option Plan

Certain executives and key employees of the Company were granted stock options under TD Group's 2003 stock option plan. Upon the closing of the acquisition of the Company by Warburg Pincus in 2003, certain employees rolled over certain then-existing options to purchase shares of common stock of TransDigm Holdings. These employees were granted rollover options to purchase an aggregate of 3,870,152 shares of common stock of TD Group (after giving effect to the 149.60 for 1.00 stock split effected on March 14, 2006). All rollover options granted were fully vested on the date of grant. In addition to shares of common stock reserved for issuance upon the exercise of rollover options, an aggregate of 5,469,301 shares of TD Group's common stock were reserved for issuance upon the exercise of new management options. In general, approximately 20% of all new management options vested based on employment service or a change in control. These time vested options had a graded vesting schedule of up to four years. There were no remaining time vested stock-based options outstanding as of September 30, 2016. Approximately 80% of all new management options vested (i) based upon the satisfaction of specified performance criteria, which is annual and cumulative EBITDA As Defined targets through 2008, or (ii) upon the occurrence of a change in control if the Investor Group (defined as Warburg Pincus and the other initial investors in TD Group) received a minimum specified rate of return. Unless terminated earlier, the options expire ten years from the date of grant.

TD Group reserved a total of 9,339,453 shares of its common stock for issuance to the Company's employees under the plan, which had all been issued as of September 30, 2013.

Performance Vested Stock Options—The following table summarizes the activity, pricing and other information for the Company's performance vested stock-based award activity during the fiscal year ended September 30, 2019:

	Number of Options	Weighted-Average Exercise Price Per Option	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at September 30, 2018	77,829	$ 130.09		
Granted	—	—		
Exercised	—	—		
Outstanding at September 30, 2019	77,829	$ 130.09	3.1 years	$ 30,398,451
Exercisable at September 30, 2019	77,829	$ 130.09	3.1 years	$ 30,398,451

The total intrinsic value of time, performance and rollover options exercised during the fiscal years ended September 30, 2019, 2018 and 2017 was $240.2 million, $192.5 million and $61.1 million, respectively.

In addition to shares issued pursuant to options exercised, during the fiscal year ended September 30, 2019, 875 shares of common stock were issued with a weighted-average grant date fair value of $476.33 as payment to directors in lieu of cash.

Dividend Equivalent Plans

Pursuant to the Third Amended and Restated TransDigm Group Incorporated 2003 Stock Option Plan Dividend Equivalent Plan, the Second Amended and Restated TransDigm Group Incorporated 2006 Stock Incentive Plan Dividend Equivalent Plan, the 2014 Stock Option Plan Dividend Equivalent Plan and the 2019 Stock Option Plan Dividend Equivalent Plan, all of the options granted under the 2003 stock option plan, the 2006 stock incentive plan, the 2014 stock option plan and the 2019 stock option plan are entitled to certain dividend equivalent payments in the event of the declaration of a dividend by the Company.

Dividend equivalent payments on vested options were $111.0 million, $56.1 million and $19.5 million during the fiscal years ended September 30, 2019, 2018 and 2017, respectively. At September 30, 2019, there was $63.8 million recorded in accrued liabilities and $48.3 million accrued in other non-current liabilities on the consolidated balance sheets related to the future dividend equivalent payments.

19. LEASES

TransDigm leases certain manufacturing facilities, offices, equipment and vehicles. Such leases, some of which are noncancelable and, in many cases, include renewals, expire at various dates. Rental expense during the fiscal years ended September 30, 2019, 2018 and 2017 was $25.5 million, $19.2 million and $19.0 million, respectively.

Future minimum rental commitments at September 30, 2019 under operating leases having initial or remaining non-cancelable lease terms exceeding one year are $22.3 million in fiscal 2020, $31.5 million in fiscal 2021, $17.2 million in fiscal 2022, $14.1 million in fiscal 2023, $12.5 million in fiscal 2024, and $27.8 million thereafter.

20. FAIR VALUE MEASUREMENTS

The following tables present our assets and liabilities that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy. The fair value hierarchy has three levels based on the reliability of the inputs used to determine fair value. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, and inputs (other than quoted prices) that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability. A financial asset or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following summarizes the carrying amounts and fair values of financial instruments (in thousands):

	Level	September 30, 2019 Carrying Amount	September 30, 2019 Fair Value	September 30, 2018 Carrying Amount	September 30, 2018 Fair Value
Assets:					
Cash and cash equivalents	1	$ 1,467,486	$ 1,467,486	$ 2,073,017	$ 2,073,017
Interest rate cap agreements[(1)]	2	1,225	1,225	36,160	36,160
Interest rate swap agreements[(2)]	2	—	—	11,634	11,634
Interest rate swap agreements[(1)]	2	—	—	61,126	61,126
Foreign currency forward exchange contracts[(2)]	2	80	80	—	—
Foreign currency forward exchange contracts[(1)]	2	21	21	—	—
Liabilities:					
Interest rate swap agreements[(3)]	2	13,218	13,218	528	528
Interest rate swap agreements[(4)]	2	202,378	202,378	142	142
Foreign currency forward exchange contracts[(3)]	2	6,308	6,308	—	—
Foreign currency forward exchange contracts[(4)]	2	403	403	—	—
Short-term borrowings - trade receivable securitization facility[(5)]	1	349,519	349,519	299,519	299,519
Long-term debt, including current portion:					
Term loans[(5)]	2	7,448,549	7,477,552	7,509,205	7,607,323
5.50% 2020 Notes[(5)]	1	—	—	547,813	548,625
6.00% 2022 Notes[(5)]	1	1,145,939	1,167,250	1,144,499	1,155,750
6.50% 2024 Notes[(5)]	1	1,194,310	1,239,000	1,193,134	1,215,000
6.50% 2025 Notes[(5)]	1	750,113	781,875	750,131	757,500
6.375% 2026 Notes[(5)]	1	943,210	998,688	942,202	942,875
6.875% 2026 Notes[(5)]	1	491,331	535,000	490,779	507,500
6.25% 2026 Notes[(5)]	1	3,942,182	4,290,000	—	—
7.50% 2027 Notes[(5)]	1	544,700	595,375	—	—
Government refundable advances	2	39,195	39,195	—	—
Capital lease obligations	2	49,906	49,906	—	—

(1) Included in other non-current assets on the consolidated balance sheets.

(2) Included in prepaid expenses and other on the consolidated balance sheets.

(3) Included in accrued liabilities on the balance sheets.

(4) Included in other non-current liabilities on the consolidated balance sheet.

(5) The carrying amount of the debt instrument is presented net of the debt issuance costs, premium and discount. Refer to Note 12, “Debt,” for gross carrying amounts.

The Company values its financial instruments using an industry standard market approach, in which prices and other relevant information are generated by market transactions involving identical or comparable assets or liabilities. No financial instruments were recognized using unobservable inputs.

Interest rate swaps were measured at fair value using quoted market prices for the swap interest rate indexes over the term of the swap discounted to present value versus the fixed rate of the contract. The interest rate caps were measured at fair value using implied volatility rates of each individual caplet and the yield curve for the related periods.

The Company’s derivative contracts consist of foreign currency exchange contracts and, from time to time, interest rate swap and cap agreements. These derivative contracts are over-the-counter, and their fair value is determined using modeling techniques that include market inputs such as interest rates, yield curves, and currency exchange rates. These contracts are categorized as Level 2 in the fair value hierarchy.

The estimated fair value of the Company’s term loans was based on information provided by the agent under the Company’s senior secured credit facility. The estimated fair values of the Company’s notes were based upon quoted market prices. There has not been any impact to the fair value of derivative liabilities due to the Company's own credit risk. Similarly, there has not been any impact to the fair value of derivative assets based on the Company's evaluation of counterparties' credit risks.

The fair value of cash and cash equivalents, trade accounts receivable-net and accounts payable approximated book value due to the short-term nature of these instruments at September 30, 2019 and 2018.

21. DERIVATIVES AND HEDGING ACTIVITIES

The Company is exposed to, among other things, the impact of changes in foreign currency exchange rates and interest rates in the normal course of business. The Company’s risk management program is designed to manage the exposure and volatility arising from these risks, and utilizes derivative financial instruments to offset a portion of these risks. The Company uses derivative financial instruments only to the extent necessary to hedge identified business risks and does not enter into such transactions for trading purposes. The Company generally does not require collateral or other security with counterparties to these financial instruments and is therefore subject to credit risk in the event of nonperformance; however, the Company monitors credit risk and currently does not anticipate nonperformance by other parties. These derivative financial instruments do not subject the Company to undue risk, as gains and losses on these instruments generally offset gains and losses on the underlying assets, liabilities, or anticipated transactions that are being hedged. The Company has agreements with each of its swap and cap counterparties that contain a provision whereby if the Company defaults on the credit facility the Company could also be declared in default on its swaps and caps, resulting in an acceleration of payment under the swaps and caps.

All derivative financial instruments are recorded at fair value in the consolidated balance sheets. For a derivative that has not been designated as an accounting hedge, the change in the fair value is recognized immediately through earnings. For a derivative that has been designated as an accounting hedge of an existing asset or liability (a fair value hedge), the change in the fair value of both the derivative and underlying asset or liability is recognized immediately through earnings. For a derivative designated as an accounting hedge of an anticipated transaction (a cash flow hedge), the change in the fair value is recorded on the consolidated balance sheet in accumulated other comprehensive income to the extent the derivative is effective in mitigating the exposure related to the anticipated transaction. The change in the fair value related to the ineffective portion of the hedge, if any, is immediately recognized in earnings. The amount recorded within accumulated other comprehensive income is reclassified into earnings in the same period during which the underlying hedged transaction affects earnings.

Interest Rate Swap and Cap Agreements – Interest rate swap and cap agreements are used to manage interest rate risk associated with floating-rate borrowings under our credit facility. The interest rate swap and cap agreements utilized by the Company effectively modify the Company’s exposure to interest rate risk by converting a portion of the Company’s floating-rate debt to a fixed rate basis through the expiration date of the interest rate swap and cap agreements, thereby reducing the impact of interest rate changes on future interest expense. These agreements involve the receipt of floating rate amounts in exchange for fixed rate interest payments over the term of the agreements without an exchange of the underlying principal amount. These derivative instruments qualify as effective cash flow hedges under GAAP. For these cash flow hedges, the effective portion of the gain or loss from the financial instruments was initially reported as a component of accumulated other comprehensive (loss) income in stockholders’ deficit and subsequently reclassified into earnings in the same line as the hedged item in the same period or periods during which the hedged item affected earnings. As the interest rate swap and cap agreements are used to manage interest rate risk, any gains or losses from the derivative instruments that are reclassified into earnings are recognized in interest expense - net in the consolidated statements of income.

The following table summarizes the Company's interest rate swap agreements:

Aggregate Notional Amount (in millions)	Start Date	End Date	Related Term Loans	Conversion of Related Variable Rate Debt to Fixed Rate of:
$750	3/31/2016	6/30/2020	Tranche E	5.3% (2.8% plus the 2.5% margin percentage)
$500	6/29/2018	3/31/2025	Tranche E	5.5% (3.0% plus the 2.5% margin percentage)
$750	6/30/2020	6/30/2022	Tranche E	5.0% (2.5% plus the 2.5% margin percentage)
$1,500	6/30/2022	3/31/2025	Tranche E	5.6% (3.1% plus the 2.5% margin percentage)
$1,000	6/28/2019	6/30/2021	Tranche F	4.3% (1.8% plus the 2.5% margin percentage)
$1,400	6/30/2021	3/31/2023	Tranche F	5.5% (3.0% plus the 2.5% margin percentage)
$500	12/30/2016	12/31/2021	Tranche G	4.4% (1.9% plus the 2.5% margin percentage)
$400	9/30/2017	9/30/2022	Tranche G	4.4% (1.9% plus the 2.5% margin percentage)
$900	12/31/2021	6/28/2024	Tranche G	5.6% (3.1% plus the 2.5% margin percentage)
$400	9/30/2022	6/28/2024	Tranche G	5.5% (3.0% plus the 2.5% margin percentage)

The following table summarizes the Company's interest rate cap agreements:

Aggregate Notional Amount (in millions)	Start Date	End Date	Related Debt	Offsets Variable Rate Debt Attributable to Fluctuations Above:
$750	9/30/2015	6/30/2020	Tranche E	Three month LIBO rate of 2.5%
$750	6/30/2020	6/30/2022	Tranche E	Three month LIBO rate of 2.5%
$400	6/30/2016	6/30/2021	Tranche F	Three month LIBO rate of 2.0%
$400	12/30/2016	12/30/2021	Tranche G	Three month LIBO rate of 2.5%

Certain derivative asset and liability balances are offset where master netting agreements provide for the legal right of setoff. For classification purposes, we record the net fair value of each type of derivative position that is expected to settle in less than one year with each counterparty as a net current asset or liability and each type of long-term position as a net non-current asset or liability. The amounts shown in the table below represent the gross amounts of recognized assets and liabilities, the amounts offset in the consolidated balance sheet and the net amounts of assets and liabilities presented therein.

	September 30, 2019		September 30, 2018	
	Asset	Liability	Asset	Liability
Interest rate cap agreements	$ 1,225	$ —	$ 36,160	$ —
Interest rate swap agreements[(1)]	—	(215,596)	72,090	—
Total	1,225	(215,596)	108,250	—
Effect of counterparty netting	—	—	670	(670)
Net derivatives as classified in the balance sheet[(2)]	$ 1,225	$ (215,596)	$ 108,920	$ (670)

(1) The increase in the interest rate swap liability is primarily attributable to a downward trend in the LIBO rate during fiscal 2019.

(2) Refer to Note 20, "Fair Value Measurements," for the consolidated balance sheet classification of our interest rate swap and cap agreements.

Based on the fair value amounts of the interest rate swap and cap agreements determined as of September 30, 2019, the estimated net amount of existing gains and losses and caplet amortization expected to be reclassified into interest expense within the next twelve months is approximately $17.2 million.

Effective September 30, 2016, the Company redesignated the interest rate cap agreements related to the $400 million and the $750 million aggregate notional amount with cap rates of 2.0% and 2.5%, respectively, based on the expected probable cash flows associated with the 2016 term loans and 2015 term loans in consideration of the Company's ability to select one-month, two-month, three-month, or six-month LIBO rate set forth in the Second Amended and Restated Credit Agreement. Accordingly, amounts previously recorded as a component of accumulated other comprehensive income (loss) in stockholder's deficit amortized into interest expense was $4.8 million and $4.0 million for the fiscal years ended September 30, 2019 and 2018, respectively. The accumulated other comprehensive income to be reclassified into interest expense over the remaining term of the cap agreements is $6.2 million with a related tax benefit of $1.5 million as of September 30, 2019.

Effective December 30, 2017, the Company redesignated the existing interest rate swap agreements related to the $750 million, $500 million, $1,000 million and $750 million aggregate notional amounts with swap rates of 5.0%, 4.4%, 4.3% and 5.3%, respectively, based on the expected probable cash flows associated with certain term loans in consideration of the Company’s removal of the LIBO rate floor on the certain term loans as set forth in Amendment No. 4 to the Second Amended and Restated Credit Agreement. Accordingly, the amount recorded as a component of accumulated other comprehensive income in stockholders’ deficit related to these redesignated interest rate swap hedges will be amortized into earnings based on the original maturity date of the related interest rate swap agreements. Amounts previously recorded as a component of accumulated other comprehensive income in stockholder’s deficit amortized into interest expense was $1.1 million and $0.8 million for the fiscal years ended September 30, 2019 and 2018, respectively. The accumulated other comprehensive income to be reclassified into interest income over the remaining term of the swap agreements is $1.7 million with a related tax expense of $0.4 million as of September 30, 2019.

Effective March 31, 2018, the Company redesignated the existing interest rate swap agreements related to the $1,000 million aggregate notional amount with a swap rate of 4.9%, which expired in June 2019, and the $400 million aggregate notional amount with swap rate of 4.4% based on the expected probable cash flows associated with certain term loans in consideration of the Company’s removal of the LIBO rate floor on the certain term loans as set forth in the refinancing facility agreement dated February 22, 2018 related to the Second Amended and Restated Credit Agreement. Accordingly, the amount recorded as a component of accumulated other comprehensive income in stockholders’ deficit related to these redesignated interest rate swap hedges will be amortized into earnings based on the original maturity date of the related interest rate swap agreements. Amounts previously recorded as a component of accumulated other comprehensive income in stockholder’s deficit amortized into interest income was $2.8 million and $1.4 million for the fiscal years ended September 30, 2019 and 2018. The accumulated other comprehensive income to be reclassified into interest income over the remaining term of the swaps agreements is $8.6 million with a related tax expense of $2.0 million as of September 30, 2019.

Foreign Currency Forward Exchange Contracts – The Company transacts business in various foreign currencies, which subjects the Company’s cash flows and earnings to exposure related to changes in foreign currency exchange rates. These exposures arise primarily from purchases or sales of products and services from third parties. Foreign currency forward exchange contracts provide for the purchase or sale of foreign currencies at specified future dates at specified exchange rates, and are used to offset changes in the fair value of certain assets or liabilities or forecasted cash flows resulting from transactions denominated in foreign currencies. At September 30, 2019, the Company had outstanding foreign currency forward exchange contracts principally to sell U.S. dollars with notional amounts of $217.2 million. These notional values consist primarily of contracts for the British pound sterling, Canadian dollar, and European euro and are stated in U.S. dollar equivalents at spot exchange rates at the respective dates. During the fiscal year ended September 30, 2019, the the Company recognized gains on foreign currency forward exchange contracts designated as fair value hedges of $0.4 million in cost of sales in the consolidated statement of income. During the fiscal year ended September 30, 2019, the gains the Company reclassified on foreign currency forward exchange contracts designated as cash flow hedges in the consolidated income statement are immaterial. The losses were previously recorded as a component of accumulated other comprehensive (loss) income in stockholders' deficit.

During the fiscal year ended September 30, 2019, the Company recorded a gain of $0.1 million on foreign currency forward exchange contracts that have not been designated as accounting hedges. These foreign currency exchange gains are included in selling and administrative expenses.

There was an immaterial impact to the Company’s earnings related to the ineffective portion of any hedging instruments during the fiscal year ended September 30, 2019. In addition, there was an immaterial impact to the Company’s earnings when a hedged firm commitment no longer qualified as a fair value hedge or when a hedged forecasted transaction no longer qualified as a cash flow hedge during the fiscal year ended September 30, 2019.

Amounts related to foreign currency forward exchange contracts included in accumulated other comprehensive (loss) income in stockholders' deficit are reclassified into earnings when the hedged transaction settles. The Company expects to reclassify approximately $5.3 million of net losses into earnings over the next 12 months. The maximum duration of the Company’s foreign currency cash flow hedge contracts at September 30, 2019 was 18 months.

22. ACCUMULATED OTHER COMPREHENSIVE (LOSS) INCOME

The following table presents the components of accumulated other comprehensive (loss) income, net of taxes, for the fiscal years ended September 30, 2019, 2018 and 2017 (in thousands):

	Unrealized (loss) gain on derivatives designated and qualifying as cash flow hedges [1]	Defined benefit pension plan activity [2]	Currency translation adjustment	Total
Balance at September 30, 2017	$ (26,669)	$ (16,365)	$ (42,109)	$ (85,143)
Current-period other comprehensive gain (loss)	91,226	5,636	(10,253)	86,609
Amounts reclassified from AOCI related to derivative instruments	2,634	—	—	2,634
Net current-period other comprehensive gain (loss)	93,860	5,636	(10,253)	89,243
Balance at September 30, 2018	67,191	(10,729)	(52,362)	4,100
Cumulative effect of ASU 2018-02, adopted October 1, 2018	(2,199)	—	—	(2,199)
Current-period other comprehensive (loss) gain	(240,776)	(29,004)	(114,856)	(384,636)
Amounts reclassified from AOCI related to derivative instruments	3,754	—	—	3,754
Net current-period other comprehensive (loss) gain	(239,221)	(29,004)	(114,856)	(383,081)
Balance at September 30, 2019	$ (172,030)	$ (39,733)	$ (167,218)	$ (378,981)

(1) Unrealized gain (loss) represents derivative instruments, net of taxes of $69,660, $(33,923) and $(20,663) for the fiscal years ended September 30, 2019, 2018 and 2017, respectively.

(2) Defined benefit pension plan and other post-retirement plan activity represents pension liability adjustments, net of taxes of $8,513, $(1,487) and $(4,130) for the fiscal years ended September 30, 2019, 2018 and 2017, respectively.

A summary of reclassifications out of accumulated other comprehensive (loss) income for the fiscal years ended September 30, 2019 and 2018 is provided below (in thousands):

	Amount Reclassified	
	Fiscal Years Ended September 30,	
Description of reclassifications out of accumulated other comprehensive (loss) income	2019	2018
Amortization from redesignated interest rate swap and cap agreements[1]	$ 3,060	$ 3,443
Losses from settlement of foreign currency forward exchange contracts[2]	(20)	—
Deferred tax expense (benefit) on reclassifications out of accumulated other comprehensive (loss) income	714	(809)
Losses reclassified into earnings, net of tax	$ 3,754	$ 2,634

(1) This component of accumulated other comprehensive (loss) income is included in interest expense (see Note 21, “Derivatives and Hedging Activities,” for additional information).

(2) This component of accumulated other comprehensive (loss) income is included in net sales (see Note 21, “Derivatives and Hedging Activities,” for additional information).

23. DISCONTINUED OPERATIONS

Current Year Divestitures

On July 21, 2019, TransDigm entered into a binding offer (the "Put Agreement") with Eaton Corporation plc ("Eaton") for the acquisition by Eaton of the shares of Souriau SAS, Souriau USA Inc. and Sunbank Family of Companies LLC which comprise the Souriau-Sunbank Connection Technologies business ("Souriau-Sunbank"). Pursuant to the terms of the Put Agreement, after completion of the consultation process with the French works council, TransDigm has the right to require Eaton to enter into a securities purchase agreement (the "Purchase Agreement") providing for the purchase by Eaton from TransDigm of the shares of Souriau-Sunbank. The Purchase Agreement was entered into by the parties on October 28, 2019. Pursuant to the terms of the Purchase Agreement, Eaton will purchase the shares of the Souriau-Sunbank for a cash purchase price of approximately $920 million.

The transaction is subject to execution and delivery of the Purchase Agreement and other definitive agreements, the satisfaction or waiver of customary closing conditions and receipt of required regulatory approvals, all of which have been received other than the French foreign investment approval. The parties expect to complete the transaction during the first quarter of fiscal 2020.

Souriau-Sunbank, which is a reporting unit within TransDigm's Non-aviation segment, is classified as held-for-sale as of September 30, 2019. The divestiture represents a strategic shift in TransDigm's business and, in accordance with US GAAP, qualify as discontinued operations. Therefore, the results of operations of Souriau-Sunbank are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented since the date acquired.

On September 20, 2019, TransDigm completed the divestiture of its Esterline Interface Technology ("EIT") group of businesses to an affiliate of KPS Capital Partners, LP for approximately $190 million. EIT was acquired by TransDigm as part of its acquisition of Esterline Technologies Corporation in March 2019 and was included in TransDigm's Non-aviation segment. The divestiture represents a strategic shift in TransDigm's business and, in accordance with US GAAP, qualify as discontinued operations. Therefore, the results of operations of EIT are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented since the date acquired.

The income from discontinued operations was $50.4 million in the consolidated statements of income for the fiscal year ended September 30, 2019. Cash related to discontinued operations, which has been excluded from the consolidated statement of cash flows, includes net cash provided by operating activities of $35.3 million and net cash used in investing activities of $10.6 million. The following is the summarized operating results for Souriau-Sunbank and EIT for the fiscal year ended September 30, 2019 (in thousands):

	Fiscal Year Ended September 30, 2019		
	Souriau-Sunbank	EIT	Total
Net sales	$ 199,356	$ 94,619	$ 293,975
(Loss) income from discontinued operations before income taxes	(17,176)	17,112	(64)
Income tax benefit (expense)	14,254	(1,131)	13,123
(Loss) income from discontinued operations, net of tax, including noncontrolling interests	(2,922)	15,981	13,059
Gain from sale of discontinued operations, net of tax	—	37,619	37,619
Less: Income attributable to noncontrolling interests	(98)	(148)	(246)
(Loss) income from discontinued operations, net of tax	$ (3,020)	$ 53,452	$ 50,432

At September 30, 2019, Souriau-Sunbank's assets held-for-sale and liabilities held-for-sale are $962.1 million and $156.7 million, respectively. Under US GAAP, assets held for sale are to be reported at lower of its carrying amount or fair value less cost to sell. The following is the summarized balance sheet of Souriau-Sunbank's assets held-for-sale and liabilities held-for-sale as of September 30, 2019 (in thousands):

Assets and Liabilities of Discontinued Operations Held-for-Sale	Fiscal Year Ended September 30, 2019
Cash and cash equivalents	$ 28,545
Trade accounts receivable—Net	66,619
Inventories—Net	87,919
Prepaid expenses and other	1,740
Property, plant and equipment—Net	100,759
Goodwill	480,310
Other intangibles—Net	194,483
Other	1,754
Total assets of discontinued operations	$ 962,129
Accounts payable	$ 33,338
Accrued liabilities	55,031
Long-term debt	5,793
Deferred income taxes	41,769
Other	20,808
Total liabilities of discontinued operations	$ 156,739

Prior Year Divestitures

In connection with the settlement of a Department of Justice investigation into the competitive effects of the acquisition, during the fourth quarter of 2017, the Company committed to dispose of the Schroth business. Therefore, Schroth was classified as held-for-sale as of September 30, 2017. The results of operations of Schroth are presented in discontinued operations in the accompanying consolidated financial statements for all periods presented. On January 26, 2018, the Company completed the sale of Schroth in a management buyout to a private equity fund and certain members of Schroth management for approximately $61.4 million, which includes a working capital adjustment of $0.3 million that was paid on July 6, 2018. The Company previously acquired Schroth in February 2017.

The loss from discontinued operations was $4.5 million and $31.7 million in the consolidated statements of income for the fiscal years ended September 30, 2018 and 2017, respectively. Previously, in the fourth quarter of fiscal 2017, the Company recorded a $32.0 million impairment charge to write down the Schroth assets to fair value. The impairment charge was based on an internal assessment of the recovery of Schroth's assets. The following is the summarized operating results for Schroth for the years ended September 30, 2018 and 2017 (in thousands):

	Fiscal Years Ended September 30,	
	2018	2017
Net sales	$ 11,808	$ 24,590
Income (loss) from discontinued operations before income taxes	354	(5,709)
Loss on classification as held-for-sale before income taxes	—	(32,000)
Income tax benefit	2,016	6,055
Income (loss) from discontinued operations, net of tax	2,370	(31,654)
Loss on sale of discontinued operations, net of tax	(6,844)	—
Loss from discontinued operations, net of tax	$ (4,474)	$ (31,654)

24. COMMITMENTS AND CONTINGENCIES

On August 8, 2019, a fire caused significant damage to the Niort, France operating facility of Leach International Europe, which is a subsidiary of TransDigm acquired via the Esterline acquisition. Leach International Europe's results are reported within the Company's Power & Control segment. The facility as well as certain machinery, equipment and inventory sustained damage. The Company suspended operations at the Niort facility as a result of the fire; however, it is in the process of transferring certain operations to temporary facilities while the facility is rebuilt, which is the rebuilding of the facility is expected to take up to 18 months.

The Company's insurance covers damage to the facility, equipment, inventory, and other assets, at replacement cost, as well as business interruption, and recovery-related expenses caused by the fire, subject to a $1 million deductible and certain sub-limits based on the nature of the covered item. Anticipated insurance recoveries related to losses and incremental costs incurred are recognized when receipt is probable. Anticipated insurance recoveries in excess of net book value of the damaged property and inventory will not be recorded until all contingencies relating to the claim have been resolved. The timing of and amounts of ultimate insurance recoveries is not known at this time.

For the fiscal year ended September 30, 2019, the Company recorded fire-related expense of $2.4 million, net of insurance recovery receivable, and is recorded within other expense in the consolidated statement of income.

25. QUARTERLY FINANCIAL DATA (UNAUDITED)

	First Quarter Ended December 29, 2018	Second Quarter Ended March 30, 2019	Third Quarter Ended June 29, 2019	Fourth Quarter Ended September 30, 2019
	(in thousands, except per share amounts)			
Fiscal Year Ended September 30, 2019[1]				
Net sales[2]	$ 993,302	$ 1,167,520	$ 1,521,061	$ 1,541,320
Gross profit[2]	564,116	649,964	713,109	882,082
Income from continuing operations, net of tax[2]	196,042	200,021	127,659	317,157
Income from discontinued operations, net of tax[2]	—	2,611	16,951	30,870
Net income attributable to noncontrolling interests[2]	—	(224)	(160)	(1,157)
Net income attributable to TD Group[2]	$ 196,042	$ 202,408	$ 144,450	$ 346,870
Net earnings per share from continuing operations—basic and diluted[3]	$ 3.05	$ 3.55	$ 2.27	$ 4.08
Net earnings per share from discontinued operations—basic and diluted[3]	—	0.05	0.30	0.55
Net earnings per share[3]	$ 3.05	$ 3.60	$ 2.57	$ 4.63

	First Quarter Ended December 30, 2017	Second Quarter Ended March 31, 2018	Third Quarter Ended June 30, 2018	Fourth Quarter Ended September 30, 2018
	(in thousands, except per share amounts)			
Fiscal Year Ended September 30, 2018[1]				
Net sales[2]	$ 847,960	$ 933,070	$ 980,662	$ 1,049,434
Gross profit[2]	476,650	534,074	569,520	597,266
Income from continuing operations, net of tax[2]	312,011	201,840	217,391	230,294
Income (loss) from discontinued operations, net of tax[2]	2,764	(5,562)	(145)	(1,531)
Net income attributable to TD Group[2]	$ 314,775	$ 196,278	$ 217,246	$ 228,763
Net earnings per share from continuing operations—basic and diluted[3]	$ 4.60	$ 3.63	$ 3.91	$ 4.14
Net earnings (loss) per share from discontinued operations—basic and diluted[3]	0.05	(0.10)	—	(0.03)
Net earnings per share[3]	$ 4.65	$ 3.53	$ 3.91	$ 4.11

(1) Results adjusted to reflect amounts reclassified to discontinued operations due to the Company’s classification of Souriau-Sunbank and EIT at September 30, 2019, and Schroth at September 30, 2017, as discontinued operations. See Note 23, “Discontinued Operations,” for additional information.

(2) The Company’s operating results include the results of operations of acquisitions from the effective date of each acquisition. See Note 2 “Acquisitions and Divestitures,” for additional details.

(3) The sum of the earnings per share for the four quarters in a year does not necessarily equal the total year earnings per share due to the weighted average number of shares outstanding in each quarter.

26. SUBSEQUENT EVENTS

On October 29, 2019, the Company entered into a purchase agreement in connection with a private offering of $2.65 billion aggregate principal amount in 5.50% senior subordinated notes due November 15, 2027. The settlement of the debt financing transaction occurred on November 13, 2019. The notes were issued at a price of 100% of their principal amount. The Company will use a portion of the net proceeds from the offering of the notes to redeem all of its outstanding (aggregate principal amount of $1.15 billion) 2022 Notes. The remaining net proceeds will be used for general corporate purposes, which may include potential future acquisitions, dividends or repurchases under its stock repurchase program.

27. SUPPLEMENTAL GUARANTOR INFORMATION

TransDigm Inc.'s 2022 Notes, 2024 Notes, 2025 Notes, 6.375% 2026 Notes, 2026 Secured Notes and 2027 Notes are jointly and severally guaranteed, on a senior subordinated basis, by TD Group, TransDigm UK Holdings plc ("TransDigm UK") and TransDigm Inc.'s Domestic Restricted Subsidiaries, as defined in the applicable Indentures. TransDigm UK's 6.875% 2026 Notes are jointly and severally guaranteed, on a senior subordinated basis, by TD Group, TransDigm Inc. and TransDigm Inc.'s Domestic Restricted Subsidiaries as defined in the applicable indenture. The following supplemental consolidating financial information presents, in separate columns, the balance sheets of the Company as of September 30, 2019 and September 30, 2018 and its statements of income and comprehensive income and cash flows for the fiscal years ended September 30, 2019, 2018 and 2017 for (i) TransDigm Group on a parent only basis with its investment in subsidiaries recorded under the equity method, (ii) TransDigm Inc. including its directly owned operations and non-operating entities, excluding TransDigm UK, (iii) TransDigm UK (iv) the Subsidiary Guarantors (other than TransDigm UK) on a combined basis, (v) Non-Guarantor Subsidiaries and (vi) the Company on a consolidated basis.

Separate financial statements of TransDigm Inc. are not presented because TransDigm Inc.'s 2022 Notes, 2024 Notes, 2025 Notes, 6.375% 2026 Notes, 2026 Secured Notes and 2027 Notes are fully and unconditionally guaranteed on a senior subordinated basis by TD Group, TransDigm UK and all of TransDigm Inc's Domestic Restricted Subsidiaries and because TD Group has no significant operations or assets separate from its investment in TransDigm Inc.

Separate financial statements of TransDigm UK are not presented because TransDigm UK's 6.875% 2026 Notes, issued in May 2018, are fully and unconditionally guaranteed on a senior subordinated basis by TD Group, TransDigm Inc. and all of TransDigm Inc.'s Domestic Restricted Subsidiaries.

TRANSDIGM GROUP INCORPORATED
CONSOLIDATING BALANCE SHEET
AS OF SEPTEMBER 30, 2019
(Amounts in thousands)

	TransDigm Group	TransDigm Inc.	Transdigm UK	Subsidiary Guarantors	Non-Guarantor Subsidiaries	Eliminations	Total Consolidated
ASSETS							
CURRENT ASSETS:							
Cash and cash equivalents	$ 29	$ 1,092,209	$ 280	$ (12,263)	$ 387,231	$ —	$ 1,467,486
Trade accounts receivable—Net	—	—	—	172,099	895,504	—	1,067,603
Inventories—Net	—	52,291	—	879,681	315,966	(15,289)	1,232,649
Assets held-for-sale	—	—	—	206,419	755,710	—	962,129
Prepaid expenses and other	—	27,175	—	45,220	62,985	—	135,380
Total current assets	29	1,171,675	280	1,291,156	2,417,396	(15,289)	4,865,247
INVESTMENT IN SUBSIDIARIES AND INTERCOMPANY BALANCES	(2,894,934)	14,729,513	974,663	16,373,195	6,898,707	(36,081,144)	—
PROPERTY, PLANT AND EQUIPMENT—NET	—	16,971	—	513,337	226,449	—	756,757
GOODWILL	—	82,924	—	5,544,529	2,192,650	—	7,820,103
OTHER INTANGIBLE ASSETS—NET	—	25,444	—	2,063,944	654,432	—	2,743,820
OTHER	—	5,364	—	33,931	29,509	—	68,804
TOTAL ASSETS	$ (2,894,905)	$ 16,031,891	$ 974,943	$ 25,820,092	$ 12,419,143	$ (36,096,433)	$ 16,254,731
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)							
CURRENT LIABILITIES:							
Current portion of long-term debt	$ —	$ 75,688	$ —	$ 1,020	$ 3,505	$ —	$ 80,213
Short-term borrowings—trade receivable securitization facility	—	—	—	—	349,519	—	349,519
Accounts payable	—	16,517	—	160,793	99,280	—	276,590
Accrued liabilities	—	215,562	12,892	237,026	210,215	—	675,695
Liabilities held-for-sale	—	—	—	22,306	134,433	—	156,739
Total current liabilities	—	307,767	12,892	421,145	796,952	—	1,538,756
LONG-TERM DEBT	—	15,893,314	491,331	49,240	35,336	—	16,469,221
DEFERRED INCOME TAXES	—	—	—	346,456	94,361	—	440,817
OTHER NON-CURRENT LIABILITIES	—	315,262	—	232,520	143,238	—	691,020
Total liabilities	—	16,516,343	504,223	1,049,361	1,069,887	—	19,139,814
TD GROUP STOCKHOLDERS' (DEFICIT) EQUITY	(2,894,905)	(484,452)	470,720	24,770,731	11,339,434	(36,096,433)	(2,894,905)
NONCONTROLLING INTEREST	—	—	—	—	9,822	—	9,822
TOTAL LIABILITIES AND STOCKHOLDERS' (DEFICIT) EQUITY	$ (2,894,905)	$ 16,031,891	$ 974,943	$ 25,820,092	$ 12,419,143	$ (36,096,433)	$ 16,254,731

TRANSDIGM GROUP INCORPORATED
CONSOLIDATING BALANCE SHEET
AS OF SEPTEMBER 30, 2018
(Amounts in thousands)

	TransDigm Group	TransDigm Inc.	TransDigm UK	Subsidiary Guarantors	Non-Guarantor Subsidiaries	Eliminations	Total Consolidated
ASSETS							
CURRENT ASSETS:							
Cash and cash equivalents	$ 389	$ 1,821,437	$ 125	$ (1,763)	$ 252,829	$ —	$ 2,073,017
Trade accounts receivable—Net	—	—	—	40,916	663,394	—	704,310
Inventories—Net	—	45,262	—	648,574	115,913	(4,457)	805,292
Prepaid expenses and other	—	16,231	—	47,020	11,417	—	74,668
Total current assets	389	1,882,930	125	734,747	1,043,553	(4,457)	3,657,287
INVESTMENT IN SUBSIDIARIES AND INTERCOMPANY BALANCES	(1,808,860)	10,459,497	1,099,886	8,928,726	2,160,236	(20,839,485)	—
PROPERTY, PLANT AND EQUIPMENT—NET	—	15,562	—	319,567	53,204	—	388,333
GOODWILL	—	97,002	—	5,466,148	660,140	—	6,223,290
OTHER INTANGIBLE ASSETS—NET	—	31,362	—	1,514,983	242,059	—	1,788,404
OTHER	—	104,633	—	29,805	5,715	—	140,153
TOTAL ASSETS	$ (1,808,471)	$ 12,590,986	$ 1,100,011	$ 16,993,976	$ 4,164,907	$ (20,843,942)	$ 12,197,467
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)							
CURRENT LIABILITIES:							
Current portion of long-term debt	$ —	$ 75,817	$ —	$ —	$ —	$ —	$ 75,817
Short-term borrowings—trade receivable securitization facility	—	—	—	—	299,519	—	299,519
Accounts payable	—	18,470	—	115,735	39,398	—	173,603
Accrued liabilities	—	118,600	13,274	162,618	56,951	—	351,443
Total current liabilities	—	212,887	13,274	278,353	395,868	—	900,382
LONG-TERM DEBT	—	12,011,166	490,780	—	—	—	12,501,946
DEFERRED INCOME TAXES	—	345,357	—	(2,329)	56,468	—	399,496
OTHER NON-CURRENT LIABILITIES	—	77,573	—	104,829	21,712	—	204,114
Total liabilities	—	12,646,983	504,054	380,853	474,048	—	14,005,938
TD GROUP STOCKHOLDERS' (DEFICIT) EQUITY	(1,808,471)	(55,997)	595,957	16,613,123	3,690,859	(20,843,942)	(1,808,471)
NONCONTROLLING INTEREST	—	—	—	—	—	—	—
TOTAL LIABILITIES AND STOCKHOLDERS' (DEFICIT) EQUITY	$ (1,808,471)	$ 12,590,986	$ 1,100,011	$ 16,993,976	$ 4,164,907	$ (20,843,942)	$ 12,197,467

TRANSDIGM GROUP INCORPORATED
CONSOLIDATING STATEMENT OF INCOME AND COMPREHENSIVE INCOME
FOR THE YEAR ENDED SEPTEMBER 30, 2019
(Amounts in thousands)

	TransDigm Group	TransDigm Inc.	TransDigm UK	Subsidiary Guarantors	Non-Guarantor Subsidiaries	Eliminations	Total Consolidated
NET SALES	$ —	$ 186,360	$ —	$ 4,103,848	$ 1,105,379	$ (172,384)	$ 5,223,203
COST OF SALES	—	109,414	—	1,771,217	705,685	(172,384)	2,413,932
GROSS PROFIT	—	76,946	—	2,332,631	399,694	—	2,809,271
SELLING AND ADMINISTRATIVE EXPENSES	—	258,465	14	348,928	140,366	—	747,773
AMORTIZATION OF INTANGIBLE ASSETS	—	925	—	98,868	35,159	—	134,952
(LOSS) INCOME FROM OPERATIONS	—	(182,444)	(14)	1,884,835	224,169	—	1,926,546
INTEREST EXPENSE (INCOME)—NET	—	855,325	35,420	(11,638)	(19,354)	—	859,753
REFINANCING COSTS	—	2,745	268	—	—	—	3,013
OTHER (INCOME) EXPENSE	—	(71,003)	89,539	(590,135)	572,514	—	915
EQUITY IN INCOME OF SUBSIDIARIES	(889,770)	(1,866,584)	—	—	—	2,756,354	—
INCOME (LOSS) FROM CONTINUING OPERATIONS BEFORE INCOME TAXES	889,770	897,073	(125,241)	2,486,608	(328,991)	(2,756,354)	1,062,865
INCOME TAX PROVISION	—	—	—	187,331	34,655	—	221,986
INCOME (LOSS) FROM CONTINUING OPERATIONS INCLUDING NONCONTROLLING INTERESTS	889,770	897,073	(125,241)	2,299,277	(363,646)	(2,756,354)	840,879
(LOSS) INCOME FROM DISCONTINUED OPERATIONS, NET OF TAX	—	(7,303)	—	—	57,735	—	50,432
NET INCOME (LOSS) INCLUDING NONCONTROLLING INTERESTS	889,770	889,770	(125,241)	2,299,277	(305,911)	(2,756,354)	891,311
NET INCOME ATTRIBUTABLE TO NONCONTROLLING INTERESTS	—	—	—	—	(1,541)	—	(1,541)
NET INCOME (LOSS) ATTRIBUTABLE TO TD GROUP	$ 889,770	$ 889,770	$ (125,241)	$ 2,299,277	$ (307,452)	$ (2,756,354)	$ 889,770
OTHER COMPREHENSIVE (LOSS) INCOME, NET OF TAX	(383,081)	(278,353)	—	10,204	(147,493)	415,642	(383,081)
TOTAL COMPREHENSIVE INCOME (LOSS)	$ 506,689	$ 611,417	$ (125,241)	$ 2,309,481	$ (454,945)	$ (2,340,712)	$ 506,689

TRANSDIGM GROUP INCORPORATED
CONSOLIDATING STATEMENT OF INCOME AND COMPREHENSIVE INCOME
FOR THE YEAR ENDED SEPTEMBER 30, 2018
(Amounts in thousands)

	TransDigm Group	TransDigm Inc.	TransDigm UK	Subsidiary Guarantors	Non-Guarantor Subsidiaries	Eliminations	Total Consolidated
NET SALES	$ —	$ 163,348	$ —	$ 3,118,032	$ 610,688	$ (80,942)	$ 3,811,126
COST OF SALES	—	94,387	—	1,253,018	367,153	(80,942)	1,633,616
GROSS PROFIT	—	68,961	—	1,865,014	243,535	—	2,177,510
SELLING AND ADMINISTRATIVE EXPENSES	—	110,405	—	425,736	(86,465)	—	449,676
AMORTIZATION OF INTANGIBLE ASSETS	—	1,261	—	62,915	8,278	—	72,454
(LOSS) INCOME FROM OPERATIONS	—	(42,705)	—	1,376,363	321,722	—	1,655,380
INTEREST EXPENSE (INCOME)—NET	—	678,155	6,943	1,308	(23,398)	—	663,008
REFINANCING COSTS	—	6,300	96	—	—	—	6,396
OTHER (INCOME) EXPENSE	—	(1,718)	—	(156,284)	158,421	—	419
EQUITY IN INCOME OF SUBSIDIARIES	(957,062)	(1,306,511)	—	—	—	2,263,573	—
INCOME (LOSS) FROM CONTINUING OPERATIONS BEFORE INCOME TAXES	957,062	581,069	(7,039)	1,531,339	186,699	(2,263,573)	985,557
INCOME TAX PROVISION	—	(375,993)	—	379,665	20,349	—	24,021
INCOME (LOSS) FROM CONTINUING OPERATIONS INCLUDING NONCONTROLLING INTERESTS	957,062	957,062	(7,039)	1,151,674	166,350	(2,263,573)	961,536
LOSS FROM DISCONTINUED OPERATIONS, NET OF TAX	—	—	—	(2,427)	(2,047)	—	(4,474)
NET INCOME (LOSS) INCLUDING NONCONTROLLING INTERESTS	957,062	957,062	(7,039)	1,149,247	164,303	(2,263,573)	957,062
NET INCOME ATTRIBUTABLE TO NONCONTROLLING INTERESTS	—	—	—	—	—	—	—
NET INCOME (LOSS) ATTRIBUTABLE TO TD GROUP	$ 957,062	$ 957,062	$ (7,039)	$ 1,149,247	$ 164,303	$ (2,263,573)	$ 957,062
OTHER COMPREHENSIVE INCOME (LOSS), NET OF TAX	89,243	95,076	—	8,491	(17,837)	(85,730)	89,243
TOTAL COMPREHENSIVE INCOME (LOSS)	$ 1,046,305	$ 1,052,138	$ (7,039)	$ 1,157,738	$ 146,466	$ (2,349,303)	$ 1,046,305

TRANSDIGM GROUP INCORPORATED
CONSOLIDATING STATEMENT OF INCOME AND COMPREHENSIVE INCOME
FOR THE YEAR ENDED SEPTEMBER 30, 2017
(Amounts in thousands)

	TransDigm Group	TransDigm Inc.	TransDigm UK	Subsidiary Guarantors	Non-Guarantor Subsidiaries	Eliminations	Total Consolidated
NET SALES	$ —	$ 143,631	$ —	$ 2,911,950	$ 535,129	$ (86,424)	$ 3,504,286
COST OF SALES	—	79,403	—	1,191,770	333,985	(85,499)	1,519,659
GROSS PROFIT	—	64,228	—	1,720,180	201,144	(925)	1,984,627
SELLING AND ADMINISTRATIVE EXPENSES	69	99,558	—	277,083	35,845	—	412,555
AMORTIZATION OF INTANGIBLE ASSETS	—	1,003	—	80,053	8,170	—	89,226
(LOSS) INCOME FROM OPERATIONS	(69)	(36,333)	—	1,363,044	157,129	(925)	1,482,846
INTEREST EXPENSE (INCOME)—NET	—	614,353	—	(1,248)	(10,516)	—	602,589
REFINANCING COSTS	—	39,807	—	—	—	—	39,807
OTHER (INCOME) EXPENSE	—	(1,881)	—	7,736	(2,835)	—	3,020
EQUITY IN INCOME OF SUBSIDIARIES	(596,956)	(1,318,945)	—	—	—	1,915,901	—
INCOME (LOSS) FROM CONTINUING OPERATIONS BEFORE INCOME TAXES	596,887	630,333	—	1,356,556	170,480	(1,916,826)	837,430
INCOME TAX PROVISION	—	33,377	—	156,251	19,261	—	208,889
INCOME (LOSS) FROM CONTINUING OPERATIONS INCLUDING NONCONTROLLING INTERESTS	596,887	596,956	—	1,200,305	151,219	(1,916,826)	628,541
LOSS FROM DISCONTINUED OPERATIONS, NET OF TAX	—	—	—	(9,496)	(22,158)	—	(31,654)
NET INCOME (LOSS) INCLUDING NONCONTROLLING INTERESTS	596,887	596,956	—	1,190,809	129,061	(1,916,826)	596,887
NET INCOME ATTRIBUTABLE TO NONCONTROLLING INTERESTS	—	—	—	—	—	—	—
NET INCOME (LOSS) ATTRIBUTABLE TO TD GROUP	$ 596,887	$ 596,956	$ —	$ 1,190,809	$ 129,061	$ (1,916,826)	$ 596,887
OTHER COMPREHENSIVE INCOME (LOSS), NET OF TAX	64,644	31,603	—	16,310	58,856	(106,769)	64,644
TOTAL COMPREHENSIVE INCOME (LOSS)	$ 661,531	$ 628,559	$ —	$ 1,207,119	$ 187,917	$ (2,023,595)	$ 661,531

TRANSDIGM GROUP INCORPORATED
CONSOLIDATING STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED SEPTEMBER 30, 2019
(Amounts in thousands)

	TransDigm Group	TransDigm Inc.	TransDigm UK	Subsidiary Guarantors	Non-Guarantor Subsidiaries	Eliminations	Total Consolidated
NET CASH (USED IN) PROVIDED BY OPERATING ACTIVITIES	$ —	$ (868,208)	$ (249,794)	$ 2,449,925	$ (327,283)	$ 10,832	$ 1,015,472
INVESTING ACTIVITIES:							
Capital expenditures, net of disposals	—	(3,608)	—	(97,220)	(763)	—	(101,591)
Payments made in connection with acquisitions	—	(3,923,850)	—	(52,305)	—	—	(3,976,155)
Proceeds in connection with sale of discontinued operations	—	188,766	—	—	—	—	188,766
Net cash used in investing activities	—	(3,738,692)	—	(149,525)	(763)	—	(3,888,980)
FINANCING ACTIVITIES:							
Intercompany activities	1,629,984	21,960	250,986	(2,310,900)	418,802	(10,832)	—
Proceeds from exercise of stock options	81,875	—	—	—	—	—	81,875
Special dividends and dividend equivalent payments	(1,712,219)	—	—	—	—	—	(1,712,219)
Repayment on term loans	—	(76,428)	—	—	—	—	(76,428)
Proceeds from senior secured notes due 2026, net	—	3,935,567	—	—	—	—	3,935,567
Proceeds from senior subordinated notes, net	—	544,248	—	—	—	—	544,248
Cash tender and redemption of senior subordinated notes due 2020	—	(550,000)	—	—	—	—	(550,000)
Proceeds from trade receivable securitization facility, net	—	—	—	—	49,423	—	49,423
Financing fees and other	—	2,325	(1,037)	—	(2,401)	—	(1,113)
Net cash (used in) provided by financing activities	(360)	3,877,672	249,949	(2,310,900)	465,824	(10,832)	2,271,353
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	—	—	—	—	(3,376)	—	(3,376)
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(360)	(729,228)	155	(10,500)	134,402	—	(605,531)
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	389	1,821,437	125	(1,763)	252,829	—	2,073,017
CASH AND CASH EQUIVALENTS, END OF PERIOD	$ 29	$ 1,092,209	$ 280	$ (12,263)	$ 387,231	$ —	$ 1,467,486

TRANSDIGM GROUP INCORPORATED
CONSOLIDATING STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED SEPTEMBER 30, 2018
(Amounts in thousands)

	TransDigm Group	TransDigm Inc.	TransDigm UK	Subsidiary Guarantors	Non-Guarantor Subsidiaries	Eliminations	Total Consolidated
NET CASH (USED IN) PROVIDED BY OPERATING ACTIVITIES	$ —	$ (386,152)	$ 6,598	$ 1,216,263	$ 183,290	$ 2,174	$ 1,022,173
INVESTING ACTIVITIES:							
Capital expenditures, net of disposals	—	(2,001)	—	(61,896)	(9,444)	—	(73,341)
Payments made in connection with acquisitions	—	(667,619)	—	—	—	—	(667,619)
Proceeds in connection with sale of discontinued operations	—	57,383	—	—	—	—	57,383
Net cash used in investing activities	—	(612,237)	—	(61,896)	(9,444)	—	(683,577)
FINANCING ACTIVITIES:							
Intercompany activities	(3,462)	1,785,796	(496,081)	(1,155,927)	(128,152)	(2,174)	—
Proceeds from exercise of stock options	57,583	—	—	—	—	—	57,583
Special dividends and dividend equivalent payments	(56,148)	—	—	—	—	—	(56,148)
Proceeds from term loans, net	—	12,779,694	—	—	—	—	12,779,694
Repayment on term loans	—	(12,174,305)	—	—	—	—	(12,174,305)
Proceeds from senior subordinated notes, net	—	—	489,608	—	—	—	489,608
Financing fees and other	—	(10,832)	—	—	—	—	(10,832)
Net cash (used in) provided by financing activities	(2,027)	2,380,353	(6,473)	(1,155,927)	(128,152)	(2,174)	1,085,600
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	—	—	—	—	(1,740)	—	(1,740)
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(2,027)	1,381,964	125	(1,560)	43,954	—	1,422,456
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	2,416	439,473	—	(203)	208,875	—	650,561
CASH AND CASH EQUIVALENTS, END OF PERIOD	$ 389	$ 1,821,437	$ 125	$ (1,763)	$ 252,829	$ —	$ 2,073,017

TRANSDIGM GROUP INCORPORATED
CONSOLIDATING STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED SEPTEMBER 30, 2017
(Amounts in thousands)

	TransDigm Group	TransDigm Inc.	TransDigm UK	Subsidiary Guarantors	Non-Guarantor Subsidiaries	Eliminations	Total Consolidated
NET CASH (USED IN) PROVIDED BY OPERATING ACTIVITIES	$ (69)	$ (587,800)	$ —	$ 1,334,099	$ 42,028	$ 475	$ 788,733
INVESTING ACTIVITIES:							
Capital expenditures, net of disposals	—	(1,984)	—	(63,305)	(5,724)	—	(71,013)
Payments made in connection with acquisitions	—	(215,990)	—	—	—	—	(215,990)
Net cash used in investing activities	—	(217,974)	—	(63,305)	(5,724)	—	(287,003)
FINANCING ACTIVITIES:							
Intercompany activities	2,939,121	(1,682,518)	—	(1,279,805)	23,677	(475)	—
Proceeds from exercise of stock options	21,177	—	—	—	—	—	21,177
Special dividends and dividend equivalent payments	(2,581,552)	—	—	—	—	—	(2,581,552)
Treasury stock purchased	(389,821)	—	—	—	—	—	(389,821)
Proceeds from term loan, net	—	2,937,773	—	—	—	—	2,937,773
Repayment on term loans	—	(1,284,698)	—	—	—	—	(1,284,698)
Proceeds from senior subordinated notes, net	—	300,386	—	—	—	—	300,386
Cash tender and redemption of senior subordinated notes due 2021, including premium	—	(528,847)	—	—	—	—	(528,847)
Proceeds from trade receivable securitization facility, net	—	99,471	—	—	—	—	99,471
Financing fees and other	—	(17,571)	—	—	—	—	(17,571)
Net cash (used in) provided by financing activities	(11,075)	(176,004)	—	(1,279,805)	23,677	(475)	(1,443,682)
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	—	—	—	—	5,519	—	5,519
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(11,144)	(981,778)	—	(9,011)	65,500	—	(936,433)
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	13,560	1,421,251	—	8,808	143,375	—	1,586,994
CASH AND CASH EQUIVALENTS, END OF PERIOD	$ 2,416	$ 439,473	$ —	$ (203)	$ 208,875	$ —	$ 650,561

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TRANSDIGM GROUP INCORPORATED
VALUATION AND QUALIFYING ACCOUNTS
FOR THE YEARS ENDED SEPTEMBER 30, 2019, 2018, AND 2017
(Amounts in Thousands)

Column A	Column B	Column C		Column D	Column E
		Additions			
Description	Balance at Beginning of Period	Charged to Costs and Expenses	Acquisitions	Deductions from Reserve[1]	Balance at End of Period
Year Ended September 30, 2019					
Allowance for uncollectible accounts	$ 4,674	$ 5,377	$ 9,417	$ (2,066)	$ 17,402
Inventory valuation reserves	99,351	17,148	16,980	(9,676)	123,803
Valuation allowance for deferred tax assets	47,249	39,651	30,760	—	117,660
Year Ended September 30, 2018					
Allowance for uncollectible accounts	$ 3,819	$ 1,498	$ 989	$ (1,632)	$ 4,674
Reserve for excess and obsolete inventory	79,775	14,998	10,764	(11,039)	94,498
Valuation allowance for deferred tax assets	33,214	14,035	—	—	47,249
Year Ended September 30, 2017					
Allowance for uncollectible accounts	$ 4,414	$ 1,095	$ 363	$ (2,053)	$ 3,819
Reserve for excess and obsolete inventory	80,039	17,361	4,254	(21,879)	79,775
Valuation allowance for deferred tax assets	27,286	5,928	—	—	33,214

[1] The amounts in this column represent charge-offs net of recoveries and the impact of foreign currency translation adjustments.

EXHIBIT INDEX
TO FORM 10-K FOR THE YEAR ENDED SEPTEMBER 30, 2019

EXHIBIT NO.	DESCRIPTION
3.190	Certificate of Formation, as amended, of Esterline Georgia US LLC (now known as TREALITY SVS LLC)
3.191	Amended and Restated Limited Liability Company Agreement of TREALITY SVS LLC
3.192	Amended and Restated Certificate of Formation, as amended, of Esterline Federal LLC (now known as ScioTeq LLC)
3.193	Amended and Restated Limited Liability Company Agreement of ScioTeq LLC
3.226	Certificate of Incorporation of TDG ESL Holdings Inc.
3.227	By-laws of TDG ESL Holdings Inc.
4.10	Form of Supplemental Indenture to Add New Guarantors
4.19	Description of Securities
10.26	Form of Stock Option Agreement for options awarded in fiscal 2019*
10.49	Eleventh Amendment to the Receivables Purchase Agreement dated as of July 30, 2019, among TransDigm Receivables LLC, TransDigm Inc., PNC Bank, National Association, as a Committed Purchaser, as Purchaser Agent for its Purchaser Group and as Administrator, Atlantic Asset Securitization LLC, as a Conduit Purchaser, Credit Agricole Corporate and Investment Bank, as a Committed Purchaser and as a Purchaser Agent for its and Atlantic's Purchaser Group, and Fifth Third Bank, as a Committed Purchaser and as Purchaser Agent for its Purchaser Group
21.1	Subsidiaries of TransDigm Group Incorporated
23.1	Consent of Independent Registered Public Accounting Firm
31.1	Certification by Principal Executive Officer of TransDigm Group Incorporated pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification by Principal Financial Officer of TransDigm Group Incorporated pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification by Principal Executive Officer of TransDigm Group Incorporated pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification by Principal Financial Officer of TransDigm Group Incorporated pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	Financial Statements and Notes to Consolidated Financial Statements formatted in XBRL.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Indicates management contract or compensatory plan contract or arrangement.

State of Delaware
Secretary of State
Division of Corporations
Delivered 03:15 PM 10/09/2014
FILED 03:09 PM 10/09/2014
SRV 141276924 - 5618663 FILE

CERTIFICATE OF FORMATION

OF

ESTERLINE GEORGIA US LLC

ARTICLE 1. NAME

The name of the limited liability company is Esterline Georgia US LLC.

ARTICLE 2. REGISTERED OFFICE AND REGISTERED AGENT

The address of the registered office of this limited liability company in Delaware is Corporation Trust Center, 1209 Orange Street, Wilmington, County of New Castle, State of Delaware 19801, and the name of its registered agent at such address is The Corporation Trust Company.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Formation this 9th day of October, 2014.

Troy Hickman
Authorized Person

State of Delaware
Secretary of State
Division of Corporations
Delivered 03:04 PM 04/12/2019
FILED 03:04 PM 04/12/2019
SR 20192796183 - File Number 5618663

STATE OF DELAWARE
CERTIFICATE OF AMENDMENT

1. Name of Limited Liability Company: Esterline Georgia US LLC

2. The Certificate of Formation of the limited liability company is hereby amended as follows:

Article First is hereby amended as follows:

Article First: "The name of the limited liability company is TREALITY SVS LLC."

IN WITNESS WHEREOF, the undersigned have executed this Certificate on the 12th day of April, A.D. 2019.

By: /s/ Halle F. Terrion
Authorized Person(s)

Name: Halle F. Terrion
Print or Type

AMENDED AND RESTATED
LIMITED LIABILITY COMPANY AGREEMENT

OF

TREALITY SVS LLC

A DELAWARE LIMITED LIABILITY COMPANY

The undersigned, being the sole member of TREALITY SVS LLC, a Delaware limited liability company (the “Company”), does hereby execute this Amended and Restated Limited Liability Company Agreement of the Company (this “Limited Liability Company Agreement”), effective as of this 12th day of April, 2019. The Company was formed as a Delaware limited liability company on the 9th day of October, 2014, upon the filing of its Certificate of Formation with the Secretary of State of the State of Delaware.

ARTICLE I

MEMBER

Esterline Europe Company LLC is the sole member of the Company (the “Member'').

ARTICLE II

OFFICE

The principal office of the Company shall be located at 600 Bellbrook Avenue, Xenia, Ohio 45385 (the “Principal Office”). The Company may have such other offices as the Member may designate or as the business of the Company may require.

ARTICLE III

PURPOSE

The sole purpose for which the Company is organized is to conduct any lawful business purpose as defined in the Delaware Limited Liability Company Act (as amended, the “Act”). The Company shall have all of the powers granted to a limited liability company under the laws of the State of Delaware.

ARTICLE IV

DURATION OF THE COMPANY

The Company shall continue in perpetuity unless terminated sooner by operation of law or by decision of the Member.

ARTICLE V

CAPITAL CONTRIBUTIONS

The Member may in the future contribute any additional capital deemed necessary by the Member for the operation of the Company.

ARTICLE VI

OWNERSHIP OF MEMBERSHIP INTERESTS

The Member shall own all of the membership interests in the Company and the Member shall have a 100% distributive share of the Company's profits, losses and cash flow.

ARTICLE VII

MANAGEMENT

The Member will manage the affairs of the Company, but shall be entitled to appoint or authorize representatives, including, but not limited to, such officers as the Member may deem necessary, to act on behalf of the Company and to delegate the authority otherwise reserved to the Member to such representatives. The signature of the Member of the Company shall be sufficient to bind the Company with respect to any matter on which the Member shall be required or entitled to act. The Member has the power, on behalf of the Company, to do all things necessary or convenient to carry out the business and affairs of the Company. A copy of this Limited Liability Company Agreement may be shown to third parties (and all third parties may rely hereupon) in order to confirm the identity and authorization of the Member.

ARTICLE VIII

PLEDGE OF MEMBERSHIP INTEREST

Notwithstanding any other provision in this Limited Liability Company Agreement, the Member shall be entitled to pledge its membership interest, including all interests, economic rights, control rights and status rights as a member, to, and otherwise grant a lien and security interest in its membership interest and all of its right, title and interest under this Limited Liability Company Agreement in favor of, any lender to the Company or an affiliate of the Company (or an agent on behalf of such lender) without any further consents, approvals or actions required by such lender (or agent), the Member, the Company or any other person under this Limited Liability Company Agreement or otherwise. So long as any such pledge of or security interest in the Member's membership interest is in effect, no consent of the Company or the Member shall be required to permit a pledgee thereof to be substituted for the Member under this Limited Liability Company Agreement upon the exercise of such pledgee's rights with respect to such membership interest. Notwithstanding anything contained herein to the contrary, and without complying with any other procedures set forth in this Limited Liability Company Agreement, upon the exercise of remedies in connection with a pledge or hypothecation, (a) the lender (or agent) or transferee of such lender (or agent), as the case may be, shall become a member under this Limited Liability Company Agreement and shall succeed to all of the rights and powers, including the right to participate in the management of the business and affairs of the Company, and shall be bound by all of the obligations, of a member under this Limited Liability Company Agreement without taking any further action on the part of such lender (or agent) or transferee, as the case may be, and (b) following such exercise of remedies, the pledging Member shall cease to be a member and shall have no further rights or powers under this Limited Liability Company Agreement. The execution and delivery of this Limited Liability Company Agreement by the Member shall constitute any necessary approval of such Member under the Act to the foregoing provisions of this Article 8. So long as any pledge of the Member's membership interest is in effect, this provision shall inure to the benefit of such pledgee and its successors, assigns and designated agents, as an intended third party beneficiary, and no amendment, modification or waiver of, or consent with respect to this provision shall in any event be effective without the prior written consent of such pledgee. All of the foregoing shall be subject to the limitations and other provisions applicable to the exercise of remedies contained in each of the Collateral Agreements. For purposes of the foregoing, "Collateral Agreements" means (1) the Guarantee and Collateral Agreement dated as of June 23, 2006, as amended and restated as of December 6, 2010, as further amended and restated as of February 14, 2011, and as further amended and restated as of February 28, 2013 (as further amended, supplemented, or otherwise modified from time to time), among the Member, certain affiliates of the Member and Credit Suisse AG, as collateral agent and (2) the Pledge and Security Agreement dated as of February 13, 2019 (as amended, supplemented or otherwise modified from time to time), among the Member, certain affiliates of the Member and The Bank of New York Mellon Trust Company, N.A., as the U.S. collateral agent.

ARTICLE IX

BOOKS AND RECORDS

The Company books shall be maintained at the Principal Office. The fiscal year of the Company shall end on such date in each year as shall be designated from time to time by the Member. The Member shall cause all known business transactions pertaining to the purpose of the Company to be entered properly and completely into said books. The Member will prepare and file on behalf of the Company all tax returns in a timely manner.

ARTICLE X

AMENDMENTS

This Limited Liability Company Agreement may be amended by a written instrument adopted by the Member and executed by the Member at any time, for any purpose, at the sole discretion of the Member.

ARTICLE XI

INDEMNIFICATION

To the fullest extent permitted by law, the Company shall defend, indemnify, and save harmless the Member and any officers of the Company (each an “Indemnified Person”) for all loss, liability, damage, cost, or expense (including reasonable attorneys' fees) incurred by reason of any demands, claims, suits, actions, or proceedings arising out of (a) the Indemnified Person's relationship to the Company or (b) such Indemnified Person's capacity as an officer, except for such loss, liability, damage, cost, or expense as arises out of the theft, fraud, willful misconduct, or gross negligence by such Indemnified Person. To the fullest extent permitted by law, expenses incurred in defending a civil or criminal action, suit or proceeding shall be paid by the Company in advance of the final disposition of such action, suit or proceeding, and not less often than monthly upon receipt of an undertaking by and on behalf of the Indemnified Person to repay such amount if it shall be ultimately determined that he or she is not entitled to be indemnified by the Company. The indemnification and advancement of expenses authorized in or ordered by a court pursuant to this Article XI shall continue for a person who has ceased to be an officer and inures to the benefit of the heirs, executors and administrators of such a person.

The Company may obtain, at the expense of the Company, directors and officers insurance coverage in an amount and on such terms as determined by the Member.

ARTICLE XII

BANKING

All funds of the Company shall be deposited in one or more Company checking accounts as shall be designated by the Member, and the Member is authorized to sign any such checks or withdrawal forms.

ARTICLE XIII

APPLICABILITY OF UCC ARTICLE 8

The Company hereby irrevocably elects that all membership interests in the Company shall be securities governed by Article 8 of the Uniform Commercial Code. Each certificate evidencing membership interests in the Company shall bear the following legend:

> "This certificate evidences an interest in TREALITY SVS LLC and shall be a security for purposes of Article 8 of the Uniform Commercial Code."

No change to this provision shall be effective until all outstanding certificates have been surrendered for cancellation and any new certificates thereafter issued shall not bear the foregoing legend.

ARTICLE XIV

MISCELLANEOUS

This Limited Liability Company Agreement is made by the Member for the exclusive benefit of the Company, the Member, and its successors and assignees. This Limited Liability Company Agreement is expressly not intended for the benefit of any creditor of the Company or any other person or entity. Except and only to the extent provided by applicable statute or otherwise in this Limited Liability Company Agreement, no such creditor or third party shall have any rights under this Limited Liability Company Agreement or any agreement between the Company and the Member with respect to any capital contribution or otherwise.

IN WITNESS WHEREOF, the Member has hereunto set its hand effective the day and year first written above.

ESTERLINE EUROPE COMPANY LLC, its sole member

By: _____________
Name: Michael J. Lisman
Its: President

State of Delaware
Secretary of State
Division of Corporations
Delivered 04:28 PM 08/03/2015
FILED 03:50 PM 08/03/2015
SRV 151126268 - 4118656 FILE

AMENDED AND RESTATED CERTIFICATE OF FORMATION OF ESTERLINE FEDERAL LLC

This Amended and Restated Certificate is duly executed and is being filed in accordance with Section 18-208 of the Delaware Limited Liability Company Act.

1. The name of the limited liability company is Esterline Federal LLC.

2. The original Certificate of Formation of the limited liability company was filed on April 3, 2006 with the Secretary of State of the state of Delaware under the name Barco Federal Systems, LLC.

3. The Certificate of Formation, as heretofore amended, is further amended and restated in its entirety to read as follows:

ARTICLE 1. NAME

The name of the limited liability company is Esterline Federal LLC.

ARTICLE 2. REGISTERED OFFICE AND REGISTERED AGENT

The address of the registered office of this limited liability company in Delaware is Corporation Trust Center, 1209 Orange Street, Wilmington, County of New Castle, State of Delaware 19801, and the name of its registered agent at such address is The Corporation Trust Company.

IN WITNESS WHEREOF, the undersigned has executed this Amended and Restated Certificate of Formation this 31st day of July, 2015.

ESTERLINE FEDERAL LLC

By ______________________
Robert D. George
Vice President, Secretary and Treasurer

State of Delaware
Secretary of State
Division of Corporations
Delivered 01:38 PM 06/10/2019
FILED 01:38 PM 06/10/2019
SR 20195339908 - File Number 4118656

CERTIFICATE OF AMENDMENT
TO THE
CERTIFICATE OF FORMATION
OF
ESTERLINE FEDERAL LLC

The undersigned, in order to amend the certificate of formation ("Certificate of Formation") of Esterline Federal LLC (the "Company") under the Delaware Limited Liability Company Act (6 Del. C. §1801, et seq.), certifies as follows:

1. The name of the Company is Esterline Federal LLC.

2. Article First of the Certificate of Formation is hereby amended and restated in its entirety to read as follows:

   "First. The name of the limited liability company is ScioTeq LLC."

3. The Certificate of Amendment shall be effective July 1, 2019.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Amendment to the Certificate of Formation on this 10th day of June, 2019.

By: [signature]
Halle F. Terrion, Authorized Person

AMENDED AND RESTATED
LIMITED LIABILITY COMPANY AGREEMENT

OF

SCIOTEQ LLC

A DELAWARE LIMITED LIABILITY COMPANY

The undersigned, being the sole member of ScioTeq LLC, a Delaware limited liability company (the "Company"), does hereby execute this Amended and Restated Limited Liability Company Agreement of the Company (this "Limited Liability Company Agreement"), effective as of this 10th day of June, 2019. The Company was formed as a Delaware limited liability company on the 3rd day of April, 2006, under the name Barco Federal Systems, LLC, upon the filing of its Certificate of Formation with the Secretary of State of the State of Delaware, as amended and restated by that certain Amended and Restated Certificate of Formation filed on the 3rd day of August, 2015.

ARTICLE I

MEMBER

TREALITY SVS LLC is the sole member of the Company (the "Member").

ARTICLE II

OFFICE

The principal office of the Company shall be located at 6650 Sugarloaf Parkway, Suite 100, Duluth, Georgia 30097 (the "Principal Office"). The Company may have such other offices as the Member may designate or as the business of the Company may require.

ARTICLE III

PURPOSE

The sole purpose for which the Company is organized is to conduct any lawful business purpose as defined in the Delaware Limited Liability Company Act (as amended, the "Act"). The Company shall have all of the powers granted to a limited liability company under the laws of the State of Delaware.

ARTICLE IV

DURATION OF THE COMPANY

The Company shall continue in perpetuity unless terminated sooner by operation of law or by decision of the Member.

ARTICLE V

CAPITAL CONTRIBUTIONS

The Member may in the future contribute any additional capital deemed necessary by the Member for the operation of the Company.

ARTICLE VI

OWNERSHIP OF MEMBERSHIP INTERESTS

The Member shall own all of the membership interests in the Company and the Member shall have a 100% distributive share of the Company's profits, losses and cash flow.

ARTICLE VII

MANAGEMENT

The Member will manage the affairs of the Company, but shall be entitled to appoint or authorize representatives, including, but not limited to, such officers as the Member may deem necessary, to act on behalf of the Company and to delegate the authority otherwise reserved to the Member to such representatives. The signature of the Member of the Company shall be sufficient to bind the Company with respect to any matter on which the Member shall be required or entitled to act. The Member has the power, on behalf of the Company, to do all things necessary or convenient to carry out the business and affairs of the Company. A copy of this Limited Liability Company Agreement may be shown to third parties (and all third parties may rely hereupon) in order to confirm the identity and authorization of the Member.

ARTICLE VIII

PLEDGE OF MEMBERSHIP INTEREST

Notwithstanding any other provision in this Limited Liability Company Agreement, the Member shall be entitled to pledge its membership interest, including all interests, economic rights, control rights and status rights as a member, to, and otherwise grant a lien and security interest in its membership interest and all of its right, title and interest under this Limited Liability Company Agreement in favor of, any lender to the Company or an affiliate of the Company (or an agent on behalf of such lender) without any further consents, approvals or actions required by such lender (or agent), the Member, the Company or any other person under this Limited Liability Company Agreement or otherwise. So long as any such pledge of or security interest in the Member's membership interest is in effect, no consent of the Company or the Member shall be required to permit a pledgee thereof to be substituted for the Member under this Limited Liability Company Agreement upon the exercise of such pledgee's rights with respect to such membership interest. Notwithstanding anything contained herein to the contrary, and without complying with any other procedures set forth in this Limited Liability Company Agreement, upon the exercise of remedies in connection with a pledge or hypothecation, (a) the lender (or agent) or transferee of such lender (or agent), as the case may be, shall become a member under this Limited Liability Company Agreement and shall succeed to all of the rights and powers, including the right to participate in the management of the business and affairs of the Company, and shall be bound by all of the obligations, of a member under this Limited Liability Company Agreement without taking any further action on the part of such lender (or agent) or transferee, as the case may be, and (b) following such exercise of remedies, the pledging Member shall cease to be a member and shall have no further rights or powers under this Limited Liability Company Agreement. The execution and delivery of this Limited Liability Company Agreement by the Member shall constitute any necessary approval of such Member under the Act to the foregoing provisions of this Article 8. So long as any pledge of the Member's membership interest is in effect, this provision shall inure to the benefit of such pledgee and its successors, assigns and designated agents, as an intended third party beneficiary, and no amendment, modification or waiver of, or consent with respect to this provision shall in any event be effective without the prior written consent of such pledgee. All of the foregoing shall be subject to the limitations and other provisions applicable to the exercise of remedies contained in each of the Collateral Agreements. For purposes of the foregoing, "Collateral Agreements" means (1) the Guarantee and Collateral Agreement dated as of June 23, 2006, as amended and restated as of December 6, 2010, as further amended and restated as of February 14, 2011, and as further amended and restated as of February 28, 2013 (as further amended, supplemented, or otherwise modified from time to time), among the Member, certain affiliates of the Member and Credit Suisse AG, as collateral agent and (2) the Pledge and Security Agreement dated as of February 13, 2019 (as amended, supplemented or otherwise modified from time to time), among the Member, certain affiliates of the Member and The Bank of New York Mellon Trust Company, N.A., as the U.S. collateral agent.

ARTICLE IX

BOOKS AND RECORDS

The Company books shall be maintained at the Principal Office. The fiscal year of the Company shall end on such date in each year as shall be designated from time to time by the Member. The Member shall cause all known business transactions pertaining to the purpose of the Company to be entered properly and completely into said books. The Member will prepare and file on behalf of the Company all tax returns in a timely manner.

ARTICLE X

AMENDMENTS

This Limited Liability Company Agreement may be amended by a written instrument adopted by the Member and executed by the Member at any time, for any purpose, at the sole discretion of the Member.

ARTICLE XI

INDEMNIFICATION

To the fullest extent permitted by law, the Company shall defend, indemnify, and save harmless the Member and any officers of the Company (each an “Indemnified Person”) for all loss, liability, damage, cost, or expense (including reasonable attorneys' fees) incurred by reason of any demands, claims, suits, actions, or proceedings arising out of (a) the Indemnified Person's relationship to the Company or (b) such Indemnified Person's capacity as an officer, except for such loss, liability, damage, cost, or expense as arises out of the theft, fraud, willful misconduct, or gross negligence by such Indemnified Person. To the fullest extent permitted by law, expenses incurred in defending a civil or criminal action, suit or proceeding shall be paid by the Company in advance of the final disposition of such action, suit or proceeding, and not less often than monthly upon receipt of an undertaking by and on behalf of the Indemnified Person to repay such amount if it shall be ultimately determined that he or she is not entitled to be indemnified by the Company. The indemnification and advancement of expenses authorized in or ordered by a court pursuant to this Article XI shall continue for a person who has ceased to be an officer and inures to the benefit of the heirs, executors and administrators of such a person.

The Company may obtain, at the expense of the Company, directors and officers insurance coverage in an amount and on such terms as determined by the Member.

ARTICLE XII

BANKING

All funds of the Company shall be deposited in one or more Company checking accounts as shall be designated by the Member, and the Member is authorized to sign any such checks or withdrawal forms.

ARTICLE XIII

APPLICABILITY OF UCC ARTICLE 8

The Company hereby irrevocably elects that all membership interests in the Company shall be securities governed by Article 8 of the Uniform Commercial Code. Each certificate evidencing membership interests in the Company shall bear the following legend:

> "This certificate evidences an interest in ScioTeq LLC and shall be a security for purposes of Article 8 of the Uniform Commercial Code."

No change to this provision shall be effective until all outstanding certificates have been surrendered for cancellation and any new certificates thereafter issued shall not bear the foregoing legend.

ARTICLE XIV

MISCELLANEOUS

This Limited Liability Company Agreement is made by the Member for the exclusive benefit of the Company, the Member, and its successors and assignees. This Limited Liability Company Agreement is expressly not intended for the benefit of any creditor of the Company or any other person or entity. Except and only to the extent provided by applicable statute or otherwise in this Limited Liability Company Agreement, no such creditor or third party shall have any rights under this Limited Liability Company Agreement or any agreement between the Company and the Member with respect to any capital contribution or otherwise.

IN WITNESS WHEREOF, the Member has hereunto set its hand effective the day and year first written above.

TREALITY SVS LLC, its sole member

By: _____________
Name: Michael J. Lisman
Its: Chief Executive Officer

State of Delaware
Secretary of State
Division of Corporations
Delivered 03:53 PM 08/26/2019
FILED 03:53 PM 08/26/2019
SR 20196714890 - File Number 7538577

CERTIFICATE OF INCORPORATION

OF

TDG ESL HOLDINGS INC.

FIRST: The name of the Corporation is TDG ESL Holdings Inc.

SECOND: The address of the Corporation's registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle 19801. The name of its registered agent at such address is The Corporation Trust Company.

THIRD: The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH: The total number of shares of stock that the Corporation shall have authority to issue is five thousand (5000) shares, all of which shall be Common Stock, $0.01 par value per share.

FIFTH: The name and mailing address of the incorporator is as follows:

Name	Mailing Address
Dennis B. Angers	Baker & Hostetler LLP 127 Public Square Suite 2000 Cleveland, Ohio 44114

SIXTH: Meetings of stockholders shall be held at such place, within or without the State of Delaware, as may be designated by or in the manner provided in the Bylaws of the Corporation, or, if not so designated, at the registered office of the Corporation in the State of Delaware. Elections of directors need not be by written ballot unless and to the extent that the Bylaws so provide.

SEVENTH: Section 203 of the Delaware General Corporation Law shall not apply to any business combination (as defined in Section 203(c)(3) of the Delaware General Corporation Law, as amended from time to time, or in any successor thereto, however denominated) in which the Corporation shall engage.

EIGHTH: To the fullest extent permitted by the Delaware General Corporation Law, as the same exists or as may hereafter be amended, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the Delaware General Corporation Law is amended after approval by the stockholders of this Article Eighth to authorize the corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law as so amended. The Corporation shall indemnify, to the fullest extent permitted by the Delaware General Corporation Law, any person made or threatened to be made a party to an action or proceeding, whether criminal, civil, administrative or investigative, by reason of the fact that he, his testator or intestate is or was a director or officer of the Corporation or any predecessor of the Corporation, or serves or served at any other enterprise as a director or officer at the request of the Corporation or any predecessor to the Corporation. Neither any amendment nor repeal of this Article Eighth, nor the adoption of any provision of the Corporation's Certificate of Incorporation inconsistent with this Article Eighth, shall eliminate or reduce the effect of this Article Eighth in respect of any matter occurring, or any action or proceeding accruing or arising or that, but for this Article Eighth, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

THE UNDERSIGNED, being the incorporator above named for the purposes of forming a corporation pursuant to the General Corporation Law of the State of Delaware, has signed this instrument the 26th day of August, 2019, and does thereby acknowledge that it is his act and deed and that the facts stated therein are true.

Dennis B. Angers

Dennis B. Angers, Incorporator

BY-LAWS
OF
TDG ESL HOLDINGS INC.
a Delaware corporation

ARTICLE I

Meetings of Stockholders

Section 1. Annual Meetings. The annual meeting of stockholders shall be held at such time and place and on such date in each year as may be fixed by the board of directors and stated in the notice of the meeting, for the election of directors, the consideration of reports to be laid before such meeting and the transaction of such other business as may properly come before the meeting.

Section 2. Special Meetings. Special meetings of the stockholders shall be called upon the written request of the chairman of the board of directors, the chief executive officer, the president, the directors by action at a meeting, a majority of the directors acting without a meeting, or of the holders of shares entitling them to exercise a majority of the voting power of the Corporation entitled to vote thereat. Calls for such meetings shall specify the purposes thereof. No business other than that specified in the call shall be considered at any special meeting.

Section 3. Notices of Meetings. Unless waived, and except as provided in Section 230 of the General Corporation Law of the State of Delaware (the "DGCL"), written notice of each annual or special meeting stating the date, time, place and purposes thereof shall be given by personal delivery or by mail to each stockholder of record entitled to vote at or entitled to notice of the meeting, not more than sixty days nor less than ten days before any such meeting. If mailed, such notice shall be directed to the stockholder at his address as the same appears upon the records of the Corporation. Any stockholder, either before or after any meeting, may waive any notice required to be given by law or under these By-laws.

Section 4. Place of Meetings. Meetings of stockholders shall be held at the principal office of the Corporation unless the board of directors determines that a meeting shall be held at some other place within or without the State of Delaware and causes the notice thereof to so state.

Section 5. Quorum. The holders of shares entitling them to exercise a majority of the voting power of the Corporation entitled to vote at any meeting, present in person or by proxy, shall constitute a quorum for the transaction of business to be considered at such meeting; provided, however, that no action required by law or by the Certificate of Incorporation or these By-laws to be authorized or taken by the holders of a designated proportion of the shares of any particular class or of each class may be authorized or taken by a lesser proportion; and provided, further, that if a separate class vote is required with respect to any matter, the holders of a majority of the outstanding shares of such class, present in person or by proxy, shall constitute a quorum of such class, and the affirmative vote of the majority of shares of such class so present shall be the act of such class. The holders of a majority of the voting shares represented at a meeting, whether or not a quorum is present, may adjourn such meeting from time to time, until a quorum shall be present.

Section 6. Record Date. The board of directors may fix a record date for any lawful purpose, including, without limiting the generality of the foregoing, the determination of stockholders entitled to (i) receive notice of or to vote at any meeting of stockholders or any adjournment thereof or to express consent to corporate action in writing without a meeting, (ii) receive payment of any dividend or other distribution or allotment of any rights, or (iii) exercise any rights in respect of any change, conversion or exchange of stock. Such record date shall not precede the date on which the resolution fixing the record date is adopted by the board of directors. Such record date shall not be more than sixty days nor less than ten days before the date of such meeting, nor more than sixty days before the date fixed for the payment of any dividend or distribution or the date fixed for the receipt or the exercise of rights, nor more than ten days after the date on which the resolution fixing the record date for such written consent is adopted by the board of directors, as the case may be.

If a record date shall not be fixed in respect of any such matter, the record date shall be determined in accordance with the DGCL.

Section 7. Proxies. A person who is entitled to attend a stockholders' meeting, to vote thereat, or to execute consents, waivers or releases, may be represented at such meeting or vote thereat, and execute consents, waivers and releases, and exercise any of his other rights, by proxy or proxies appointed by a writing signed by such person.

ARTICLE II

Directors

Section 1. Number of Directors. Until changed in accordance with the provisions of this section, the number of directors of the Corporation, none of whom need be stockholders, shall be no fewer than two (2) and no more than three (3). The number of directors may be fixed or changed by amendment of these By-laws or by resolution of the board of directors.

Section 2. Election of Directors. Directors shall be elected at the annual meeting of stockholders, but when the annual meeting is not held or directors are not elected thereat, they may be elected at a special meeting called and held for that purpose. Such election shall be by ballot whenever requested by any stockholder entitled to vote at such election, but unless such request is made the election may be conducted in any manner approved at such meeting.

At each meeting of stockholders for the election of directors, the persons receiving the greatest number of votes shall be directors.

Section 3. Term of Office. Each director shall hold office until the annual meeting next succeeding his election and until his successor is elected and qualified, or until his earlier resignation, removal from office or death.

Section 4. Removal. All the directors, or all the directors of a particular class, or any individual director may be removed from office, without assigning any cause, by the vote of the holders of a majority of the voting power entitling them to elect directors in place of those to be removed.

Section 5. Vacancies. Vacancies in the board of directors may be filled by a majority vote of the remaining directors until an election to fill such vacancies is held. Stockholders entitled to elect directors shall have the right to fill any vacancy in the board (whether the same has been temporarily filled by the remaining directors or not) at any meeting of the stockholders called for that purpose, and any directors elected at any such meeting of stockholders shall serve until the next annual election of directors and until their successors are elected and qualified.

Section 6. Quorum and Transaction of Business. A majority of the whole authorized number of directors shall constitute a quorum for the transaction of business, except that a majority of the directors in office shall constitute a quorum for filling a vacancy on the board. Whenever less than a quorum is present at the time and place appointed for any meeting of the board, a majority of those present may adjourn the meeting from time to time, until a quorum shall be present. The act of a majority of the directors present at a meeting at which a quorum is present shall be the act of the board.

Section 7. Annual Meeting. Annual meetings of the board of directors shall be held immediately following annual meetings of the stockholders, or as soon thereafter as is practicable. If no annual meeting of the stockholders is held, or if directors are not elected thereat, then the annual meeting of the board of directors shall be held immediately following any special meeting of the stockholders at which directors are elected, or as soon thereafter as is practicable. If such annual meeting of directors is held immediately following a meeting of the stockholders, it shall be held at the same place at which such stockholders' meeting was held.

Section 8. Regular Meetings. Regular meetings of the board of directors shall be held at such times and places, within or without the State of Delaware, as the board of directors may, by resolution, from time to time determine. The secretary shall give notice of each such resolution to any director who was not present at the time the same was adopted, but no further notice of such regular meeting need be given.

Section 9. Special Meetings. Special meetings of the board of directors may be called by the chairman of the board, the chief executive officer, the president, any vice president or any two members of the board of directors, and shall be held at such times and places, within or without the State of Delaware, as may be specified in such call.

Section 10. Notice of Annual or Special Meetings. Notice of the time and place of each annual or special meeting of the board of directors shall be given to each director by the secretary or by the person or persons calling such meeting. Such notice need not specify the purpose or purposes of the meeting and may be given in any manner or method and at such time so that the director receiving it may have reasonable opportunity to attend the meeting. Such notice shall, in all events, be deemed to have been properly and duly given if mailed at least forty-eight hours prior to the meeting and directed to the residence of each director as shown upon the secretary's records. The giving of notice shall be deemed to have been waived by any director who shall attend and participate in such meeting and may be waived, in writing, by any director either before or after such meeting.

Section 11. Compensation. The directors, as such, shall be entitled to receive such reasonable compensation, if any, for their services as may be fixed from time to time by resolution of the board, and expenses of attendance, if any, may be allowed for attendance at each annual, regular or special meeting of the board. Nothing herein contained shall be construed to preclude any director from serving the Corporation in any other capacity and receiving compensation therefor. Members of the executive committee or of any standing or special committee may, by resolution of the board, be allowed such compensation for their services as the board may deem reasonable, and additional compensation may be allowed to directors for special services rendered.

ARTICLE III

Committees

Section 1. Executive Committee. The board of directors may from time to time, by resolution passed by a majority of the whole board, create an executive committee of three or more directors, the members of which shall be elected by the board of directors to serve during the pleasure of the board. If the board of directors does not designate a chairman of the executive committee, the executive committee shall elect a chairman from its own number. Except as otherwise provided herein and in the resolution creating an executive committee, such committee shall, during the intervals between the meetings of the board of directors, possess and may exercise all of the powers of the board of directors in the management of the business and affairs of the Corporation, other than that of filling vacancies among the directors or in any committee of the directors or except as provided by law. The executive committee shall keep full records and accounts of its proceedings and transactions. All action by the executive committee shall be reported to the board of directors at its meeting next succeeding such action and shall be subject to control, revision and alteration by the board of directors, provided that no rights of third persons shall be prejudicially affected thereby. Vacancies in the executive committee shall be filled by the directors, and the directors may appoint one or more directors as alternate members of the committee who may take the place of any absent member or members at any meeting.

Section 2. Meetings of Executive Committee. Subject to the provisions of these By-laws, the executive committee shall fix its own rules of procedure and shall meet as provided by such rules or by resolutions of the board of directors, and it shall also meet at the call of the chairman of the board, the chief executive officer, the president, the chairman of the executive committee or any two members of the committee. Unless otherwise provided by such rules or by such resolutions, the provisions of Section 10 of Article II relating to the notice required to be given of meetings of the board of directors shall also apply to meetings of the members of the executive committee. A majority of the executive committee shall be necessary to constitute a quorum. The executive committee may act in writing without a meeting, but no such action of the executive committee shall be effective unless concurred in by all members of the committee.

Section 3. Other Committees. The board of directors may by resolution provide for such other standing or special committees as it deems desirable, and discontinue the same at its pleasure. Each such committee shall have such powers and perform such duties, not inconsistent with law, as may be delegated to it by the board of directors. The provisions of Section 1 and Section 2 of this Article shall govern the appointment and action of such committees so far as consistent, unless otherwise provided by the board of directors. Vacancies in such committees shall be filled by the board of directors or as the board of directors may provide.

ARTICLE IV

Officers

Section 1. General Provisions. The board of directors shall elect a president, such number of vice presidents, if any, as the board may from time to time determine, a secretary and a treasurer. The board of directors may also elect a chairman of the board of directors and may from time to time create such offices and appoint such other officers, subordinate officers and assistant officers as it may determine. The chairman of the board, if one be elected, shall be, but the other officers need not be, chosen from among the members of the board of directors. Any two or more of such offices, other than those of president and vice president, may be held by the same person.

Section 2. Term of Office. The officers of the Corporation shall hold office at the pleasure of the board of directors, and, unless sooner removed by the board of directors, until the annual meeting of the board of directors following the date of their election and until their successors are chosen and qualified. The board of directors may remove any officer at any time, with or without cause. Subject to the provisions of Section 8 of Article V of these By-laws, a vacancy in any office, however created, shall be filled by the board of directors.

ARTICLE V

Duties of Officers

Section 1. Chairman of the Board. The chairman of the board, if any, shall preside at all meetings of the board of directors and meetings of stockholders and shall have such other powers and duties as may be prescribed by the board of directors.

Section 2. Chief Executive Officer. The chief executive officer, if any, shall have, subject to the powers of the board of directors, charge of the overall general direction of the business and affairs of the Corporation, control of the general policies relating to all aspects of the Corporation’s business operations, and the power to fix the compensation of officers and the power to remove officers. In the absence of the chairman of the board, or if none be elected, the chief executive officer shall preside at meetings of stockholders. The chief executive officer may appoint and discharge agents and employees and perform such other duties as are incident to such office. The chief executive officer shall have such other powers and perform such other duties as may be prescribed by the board of directors or as may be provided in these By-laws. In the absence or disability of the officer designated as chief executive officer, the president shall perform any and all duties of the chief executive officer

Section 3. President. The president shall be the chief operating officer of the Corporation and shall have such other powers and duties as may be prescribed by the board of directors or the chief executive officer. The president shall have authority to sign all certificates for shares and all deeds, mortgages, bonds, agreements, notes, and other instruments requiring his signature; and shall have all the powers and duties prescribed by the DGCL and such others as the board of directors may from time to time assign to him.

Section 4. Vice Presidents. The vice presidents shall have such powers and duties as may from time to time be assigned to them by the board of directors, the chief executive officer or the president. At the request of the chief executive officer or the president, or in the case of his absence or disability, the vice president designated by the president (or in the absence of such designation, the vice president designated by the board) shall perform all the duties of the president and, when so acting, shall have all the powers of the president. The authority of vice presidents to sign in the name of the Corporation certificates for shares and deeds, mortgages, bonds, agreements, notes and other instruments shall be coordinate with like authority of the president.

Section 5. Secretary. The secretary shall keep minutes of all the proceedings of the stockholders and the board of directors and shall make proper record of the same, which shall be attested by him; shall have authority to execute and deliver certificates as to any of such proceedings and any other records of the Corporation; shall have authority to sign all certificates for shares and all deeds, mortgages, bonds, agreements, notes and other instruments to be executed by the Corporation which require his signature; shall give notice of meetings of stockholders and directors; shall produce on request at each meeting of stockholders a certified list of stockholders arranged in alphabetical order; shall keep such books and records as may be required by law or by the board of directors; and, in general, shall perform all duties incident to the office of secretary and such other duties as may from time to time be assigned to him by the board of directors, the chief executive officer or the president.

Section 6. Treasurer. The treasurer shall have general supervision of all finances; he shall have in charge all money, bills, notes, deeds, leases, mortgages and similar property belonging to the Corporation, and shall do with the same as may from time to time be required by the board of directors. He shall cause to be kept adequate and correct accounts of the business transactions of the Corporation, including accounts of its assets, liabilities, receipts, disbursements, gains, losses, stated capital and shares, together with such other accounts as may be required; and he shall have such other powers and duties as may from time to time be assigned to him by the board of directors, the chief executive officer or the president.

Section 7. Assistant and Subordinate Officers. Each other officer shall perform such duties as the board of directors, the chief executive officer or the president may prescribe.

The board of directors may, from time to time, authorize any officer to appoint and remove subordinate officers, to prescribe their authority and duties, and to fix their compensation.

Section 8. Duties of Officers May Be Delegated. In the absence of any officer of the Corporation, or for any other reason the board of directors may deem sufficient, the board of directors may delegate, for the time being, the powers or duties, or any of them, of such officers to any other officer or to any director.

ARTICLE VI

Indemnification and Insurance

Section 1. Indemnification in Non-Derivative Actions. The Corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Corporation) by reason of the fact that he is or was a director or officer of the Corporation, or is or was serving at the request of the Corporation as a director, officer, member, manager, employee or agent of another corporation, limited liability company, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his conduct was unlawful.

Section 2. Indemnification in Derivative Actions. The Corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that he is or was a director or officer of the Corporation, or is or was serving at the request of the Corporation as a director, officer, member, manager, employee or agent of another corporation, limited liability company, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the Corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Section 3. Indemnification as a Matter of Right. To the extent that a director, officer, employee or agent of the Corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in Sections 1 and 2 of this Article VI, or in defense of any claim, issue or matter therein, he shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him in connection therewith.

Section 4. Determination of Conduct. Any indemnification under Sections 1 and 2 of this Article VI (unless ordered by a court) shall be made by the Corporation only as authorized in the specific case upon a determination that indemnification of the director, officer, employee or agent is proper in the circumstances because he has met the applicable standard of conduct set forth in Sections 1 and 2 of this Article VI. Such determination shall be made (1) by the board of directors by a majority vote of a quorum consisting of directors who were not parties to such action, suit or proceeding, or (2) if such a quorum is not obtainable, or, even if obtainable a quorum of disinterested directors so directs, by independent legal counsel in a written opinion, or (3) by the stockholders.

Section 5. Advance Payment of Expenses. Expenses incurred in defending a civil or criminal action, suit or proceeding may be paid by the Corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of the director, officer, employee or agent to repay such amount if it shall ultimately be determined that he is not entitled to be indemnified by the Corporation as authorized in this section.

Section 6. Nonexclusivity. The indemnification and advancement of expenses provided by, or granted pursuant to, this Article VI shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any by-law, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding such office.

Section 7. Liability Insurance. The Corporation shall have the power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, member, manager, employee or agent of another corporation, limited liability company, partnership, joint venture, trust or other enterprise against any liability asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the Corporation would have the power to indemnify him against such liability under the provisions of this section.

Section 8. Corporation. For purposes of this Article VI, references to "the Corporation" shall include, in addition to the resulting entity, any constituent entity (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, members, managers and employees or agents, so that any person who is or was a director, officer, member, manager, employee or agent of such constituent entity, or is or was serving at the request of such constituent entity as a director, officer, member, manager, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Article VI with respect to the resulting or surviving entity as he would have with respect to such constituent entity if its separate existence had continued.

Section 9. Employee Benefit Plans. For purposes of this Article VI, references to any “other enterprise” shall include employee benefit plans; references to “fines” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “serving at the request of the Corporation” shall include any service as a director, officer, employee or agent of the Corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “not opposed to the best interests of the Corporation” as referred to in this Article VI.

Section 10. Continuation. The indemnification and advancement of expenses provided by, or granted pursuant to, this Article VI shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

ARTICLE VII

Certificates for Shares

Section 1. Form and Execution. Certificates for shares, certifying the number of full-paid shares owned, shall be issued to each stockholder in such form as shall be approved by the board of directors. Such certificates shall be signed by the chairman or vice-chairman of the board of directors, the chief executive officer or the president or a vice president and by the secretary or an assistant secretary or the treasurer or an assistant treasurer; provided, however, that the signatures of any of such officers and the seal of the Corporation upon such certificates may be facsimiles, engraved, stamped or printed. If any officer or officers who shall have signed, or whose facsimile signature shall have been used, printed or stamped on any certificate or certificates for shares, shall cease to be such officer or officers, because of death, resignation or otherwise, before such certificate or certificates shall have been delivered by the Corporation, such certificate or certificates shall nevertheless be as effective in all respects as though signed by a duly elected, qualified and authorized officer or officers, and as though the person or persons who signed such certificate or certificates, or whose facsimile signature or signatures shall have been used thereon, had not ceased to be an officer or officers of the Corporation.

Section 2. Registration of Transfer. Any certificate for shares of the Corporation shall be transferable in person or by attorney upon the surrender thereof to the Corporation or any transfer agent therefor (for the class of shares represented by the certificate surrendered) properly endorsed for transfer and accompanied by such assurances as the Corporation or such transfer agent may require as to the genuineness and effectiveness of each necessary endorsement.

Section 3. Lost, Destroyed or Stolen Certificates. A new share certificate or certificates may be issued in place of any certificate theretofore issued by the Corporation which is alleged to have been lost, destroyed or wrongfully taken upon (i) the execution and delivery to the Corporation by the person claiming the certificate to have been lost, destroyed or wrongfully taken of an affidavit of that fact, specifying whether or not, at the time of such alleged loss, destruction or taking, the certificate was endorsed, and (ii) the furnishing to the Corporation of indemnity and other assurances, if any, satisfactory to the Corporation and to all transfer agents and registrars of the class of shares represented by the certificate against any and all losses, damages, costs, expenses or liabilities to which they or any of them may be subjected by reason of the issue and delivery of such new certificate or certificates or in respect of the original certificate.

Section 4. Registered Stockholders. A person in whose name shares are of record on the books of the Corporation shall conclusively be deemed the unqualified owner and holder thereof for all purposes and to have capacity to exercise all rights of ownership. Neither the Corporation nor any transfer agent of the Corporation shall be bound to recognize any equitable interest in or claim to such shares on the part of any other person, whether disclosed upon such certificate or otherwise, nor shall they be obliged to see to the execution of any trust or obligation.

ARTICLE VIII

Fiscal Year

The fiscal year of the Corporation shall end on such date in each year as shall be designated from time to time by the board of directors. In the absence of such designation, the fiscal year of the Corporation shall end on December 31 in each year.

ARTICLE IX

Seal

The board of directors may provide a suitable seal containing the name of the Corporation. If deemed advisable by the board of directors, duplicate seals may be provided and kept for the purposes of the Corporation.

ARTICLE X

Amendments

These By-laws shall be subject to alteration, amendment, repeal, or the adoption of new By-laws either by the affirmative vote or written consent of a majority of the whole board of directors, or by the affirmative vote or written consent of the holders of record of a majority of the outstanding stock of the Corporation, present in person or represented by proxy and entitled to vote in respect thereof, given at an annual meeting or at any special meeting at which a quorum shall be present.

[ISSUER],

TRANSDIGM GROUP INCORPORATED,

THE GUARANTORS NAMED HEREIN,

[AND]

[___________________________________],

as Trustee

[AND]

[___________________________________]

[as Collateral Agent]

[_____] **SUPPLEMENTAL INDENTURE**

Dated as of [_____]

to

Indenture

Dated as of [_____]

by and among

[ISSUER],

TRANSDIGM GROUP INCORPORATED,

THE GUARANTORS NAMED THEREIN,

[AND]

[___________________________________],

as Trustee

[AND]

[___________________________________]

[as Collateral Agent]

[_____]% Notes due [_____]

This **[_____] SUPPLEMENTAL INDENTURE** (this "***Supplemental Indenture***"), dated as of [_____], is entered into by and among [_____] (the "***Guaranteeing Subsidiary***"), [Issuer] (the "***Company***"), TransDigm Group Incorporated, a Delaware corporation ("***TD Group***"), [_____], [_____], and [_____] (collectively, the "***Existing Guarantors***"), and [_____], as trustee (the "***Trustee***") under the Indenture referred to below.

WHEREAS, the Company and the Existing Guarantors have heretofore executed and delivered to the Trustee an indenture, dated as of [______] [(as supplemented to date, the "***Indenture***"), providing for the issuance by the Company of [_____]% Notes due [_____] (the "***Notes***") and the guarantees thereof by each of the Existing Guarantors;

WHEREAS, the Indenture provides that under certain circumstances described therein, newly created or acquired Domestic Restricted Subsidiaries shall execute and deliver to the Trustee a supplemental indenture to the Indenture providing for a senior subordinated guarantee of payment of the Notes by such Domestic Restricted Subsidiaries (the "***Guarantee***");

WHEREAS, all things necessary to make this Supplemental Indenture the legal, valid and binding obligation of the Company, the Existing Guarantors and the Guaranteeing Subsidiary have been done; and

WHEREAS, pursuant to Section 9.01(g) of the Indenture, the Trustee is authorized to execute and deliver this Supplemental Indenture without the consent of the Holders of the Notes.

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, the Guaranteeing Subsidiary covenants and agrees for the equal and ratable benefit of the Holders of the Notes as follows:

1. **CAPITALIZED TERMS**. Capitalized terms used herein without definition shall have the meanings assigned to them in the Indenture.
2. **GUARANTEE, ETC**. The Guaranteeing Subsidiary hereby agrees that from and after the date hereof it shall be a Guarantor under the Indenture and be bound by the terms thereof applicable to Guarantors and shall be entitled to all of the rights and subject to all the obligations of a Guarantor thereunder.
3. **RATIFICATION OF INDENTURE; SUPPLEMENTAL INDENTURE PART OF INDENTURE**. The Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This Supplemental Indenture shall form a part of the Indenture for all purposes, and every holder of Notes heretofore or hereafter authenticated and delivered shall be bound hereby.
4. **EXECUTION AND DELIVERY**. The Guaranteeing Subsidiary agrees that the Guarantee granted by it pursuant to the terms hereof shall remain in full force and effect notwithstanding any failure to endorse on each Note a notation of such Guarantee.
5. **NO RECOURSE AGAINST OTHERS**. No past, present or future director, officer, employee, incorporator, stockholder or agent of the Guaranteeing Subsidiary (or any successor entity) (other than the Company or the Existing Guarantors), as such, shall have any liability for any obligations of the Company, TD Group, the Guaranteeing Subsidiary or any other Guarantor under the Notes, any Guarantee, the Indenture or this Supplemental Indenture or for any claim based on, in respect of, or by reason of, such obligations or their creation. Each Holder of the Notes by accepting a Note waives and

releases all such liability. The waiver and release are part of the consideration for issuance of the Notes.

6. **NEW YORK LAW TO GOVERN**. THE INTERNAL LAW OF THE STATE OF NEW YORK SHALL GOVERN AND BE USED TO CONSTRUE THIS SUPPLEMENTAL INDENTURE AND THE GUARANTEE GRANTED HEREUNDER WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.

7. **COUNTERPART ORIGINALS**. The parties may sign any number of copies of this Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

8. **EFFECT OF HEADINGS**. The Section headings have been inserted for convenience of reference only, are not to be considered part of this Supplemental Indenture and shall in no way modify or restrict any of the terms or provisions hereof.

9. **THE TRUSTEE**. The Trustee shall not be responsible in any manner whatsoever for or in respect of the validity or sufficiency of this Supplemental Indenture or for or in respect of the recitals contained herein, all of which recitals are made solely by the Guaranteeing Subsidiary, the Existing Guarantors and the Company.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed as of the date hereof.

[GUARANTEEING SUBSIDIARY]

By: __
Name:
Title:

[ISSUER]

By: __
Name:
Title

[EXISTING GUARANTORS]

By: __
Name:
Title:

[____________________________________], AS TRUSTEE

By: __
Name:
Title:

[____________________________________, AS COLLATERAL AGENT]

[By: __]
[Name:]
[Title:]

Exhibit 4.19

DESCRIPTION OF SECURITIES

General

The following summary describes the material terms of the capital stock of TransDigm Group Incorporated, a Delaware corporation ("TD Group"). However, the following summary is qualified in its entirety by reference to the actual terms of the capital stock contained in TD Group's second amended and restated certificate of incorporation and applicable law. TD Group's second amended and restated certificate of incorporation provides that TD Group's authorized capital stock consists of 224,400,000 shares of common stock, par value $0.01 per share, and 149,600,000 shares of preferred stock, par value $0.01 per share, that are undesignated as to series.

Common Stock

The holders of common stock are entitled to one vote per share in all matters to be voted on by TD Group's stockholders and are not entitled to cumulative voting rights. Accordingly, holders of a majority of the outstanding shares of common stock entitled to vote in any election of directors may elect all of the directors standing for election. Subject to the rights of the holders of any preferred stock that may from time to time be outstanding, holders of common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by TD Group's Board of Directors out of funds legally available therefor. In the event of TD Group's liquidation, dissolution or winding up, holders of common stock are entitled to share ratably in all assets remaining after payment of TD Group's liabilities and the liquidation preference, if any, of any outstanding preferred stock. Holders of shares of common stock have no preemptive, subscription or conversion rights. There are no redemption or sinking fund provisions applicable to TD Group's common stock. All of the outstanding shares of common stock are fully paid and non-assessable. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock which TD Group may designate and issue in the future.

Preferred Stock

Under TD Group's second amended and restated certificate of incorporation, TD Group's Board of Directors has the authority, without action by TD Group's stockholders, to designate and issue any authorized but unissued shares of preferred stock in one or more series and to designate the rights, preferences and privileges of each series, any or all of which may be greater than the rights of TD Group's common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock upon the rights of holders of TD Group's common stock until TD Group's Board of Directors determines the specific rights of the holders of preferred stock. However, the effects might include, among other things, restricting dividends on the common stock, diluting the voting power of the common stock, impairing the liquidation rights of the common stock and delaying or preventing a change in control without further action by TD Group's stockholders.

Anti-Takeover Provisions

Provisions in TD Group's second amended and restated certificate of incorporation and third amended and restated bylaws may discourage, delay or prevent a merger or acquisition involving TD Group that its stockholders may consider favorable. TD Group's second amended and restated certificate of incorporation provides that the affirmative vote of the holders of at least 75% of the voting power of TD Group's issued and outstanding capital stock, voting together as a single class, is required for the alteration, amendment or repeal of certain provisions of its second amended and restated certificate of incorporation and certain provisions of its third amended and restated bylaws, including the provisions relating to its stockholders' ability to call special meetings, notice provisions for stockholder business to be conducted at an annual meeting, requests for stockholder lists and corporate records, nomination and removal of directors, and filling of vacancies on TD Group's Board of Directors.

TD Group is also subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law. Under these provisions, if anyone becomes an "interested stockholder," TD Group may not enter into a "business combination" with that person for three years without special approval, which could discourage a third party from making a takeover offer and could delay or prevent a change of control. For purposes of Section 203, “interested stockholder” means, generally, someone owning 15% or more of TD Group’s outstanding voting stock or an affiliate of TD Group that owned 15% or more of TD Group’s outstanding voting stock during the past three years, subject to certain exceptions as described in Section 203.

FORM OF OPTION AGREEMENT (2019) – FIVE-YEAR GRANT AND EXTENSION GRANT

STOCK OPTION GRANT NOTICE AND STOCK OPTION AGREEMENT

TransDigm Group Incorporated, a Delaware corporation (the "***Company***"), pursuant to its 2014 Stock Option Plan (the "***Plan***"), hereby grants to the holder listed below ("***Participant***"), an option to purchase the number of shares of the Company's common stock, par value $0.01 ("***Stock***"), set forth below (the "***Option***"). This Option is subject to all of the terms and conditions set forth herein and in the Stock Option Agreement attached hereto as Exhibit A (the "***Stock Option Agreement***") and the Plan, which are incorporated herein by reference. Unless otherwise defined herein, the terms defined in the Plan shall have the same defined meanings in this Grant Notice and the Stock Option Agreement.

Participant:	______________________________
Grant Date:	______________________________
Exercise Price per Share:	$______________________________
Total Number of Shares Subject to the Option:	______________________________Shares
Expiration Date:	______________________________

By his or her signature, the Participant agrees to be bound by the terms and conditions of the Plan, the Stock Option Agreement and this Grant Notice. The Participant has reviewed the Stock Option Agreement, the Plan and this Grant Notice in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Grant Notice and fully understands all provisions of this Grant Notice, the Stock Option Agreement and the Plan. The Participant agrees that as a condition to receiving the Option, the Participant shall comply with the Stock Retention Guidelines set forth on Exhibit C. The Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Committee upon any questions arising under the Plan or relating to the Option.

Type of Option:	☐ Incentive Stock Option x Non-Qualified Stock Option
Vesting Schedule:	Subject to the terms of the Stock Option Agreement (including without limitation all exhibits thereto), the Option shall be eligible to become exercisable upon the achievement of performance objectives over the period set forth in Exhibit B hereto (provided that the Participant is an Eligible Person (as defined in the Plan) at all times during the period beginning on the Grant Date and ending on the applicable vesting date):

TRANSDIGM GROUP INCORPORATED		**PARTICIPANT**	
By:		By:	
Print Name:		Print Name:	
Title:			
Address:		Address:	

EXHIBIT A

TO STOCK OPTION GRANT NOTICE

STOCK OPTION AGREEMENT

Pursuant to the Stock Option Grant Notice (the "***Grant Notice***") to which this Stock Option Agreement (this "***Agreement***") is attached, TransDigm Group Incorporated, a Delaware corporation (the "***Company***"), has granted to the Participant an option (the "***Option***")[1] under the Company's 2014 Stock Option Plan (the "***Plan***") to purchase the number of shares of Stock indicated in the Grant Notice.

ARTICLE I.

GENERAL

1.1 Defined Terms. Wherever the following terms are used in this Agreement they shall have the meanings specified below, unless the context clearly indicates otherwise. Capitalized terms not specifically defined herein shall have the meanings specified in the Plan and the Grant Notice.

(a) "***Administrator***" shall mean the Board or the Compensation Committee or other committee of the Board responsible for conducting the general administration of the Plan in accordance with Section 3 of the Plan; provided that if the Participant is an Independent Director, "Administrator" shall mean the Board.

(b) "***Consultant***" shall mean an individual who renders services to the Company as a consultant and has been so designated by the Committee.

(c) "***Credit Agreement***" shall mean that certain credit agreement dated as of June 4, 2014 among TransDigm, Inc., TransDigm Group Incorporated and the lenders party thereto, as in effect as of the Grant Date and without reference to any amendment to the Credit Agreement made following the Grant Date.

(d) "***Diluted Shares***" as of a given date shall mean the total diluted weighted-average of common shares of the Company outstanding as of such date.

(e) "***EBITDA***" for a given fiscal year of the Company shall mean Consolidated EBITDA (as defined in the Credit Agreement) of the Company for such fiscal year on a pro forma basis adjusted for acquisitions or divestitures.

(f) "***Independent Director***" shall mean a non-employee director of the Company.

(g) "***Net Debt***" shall mean, as of the last day of a given fiscal year of the Company, the excess of (a) Consolidated Total Indebtedness (as defined in the Credit Agreement) of the Company over (b) the amount of cash and cash equivalents set forth on the Company's balance sheet.

(h) "***Termination of Consultancy***" shall mean the time when the engagement of the Participant as a Consultant to the Company or a Subsidiary is terminated for any reason, with or without cause, including, but not by way of limitation, by resignation, discharge, death or retirement, but excluding: (i) terminations where there is a simultaneous employment or continuing employment of the Participant by the Company or any Subsidiary, and (ii) terminations where there is a simultaneous re-establishment of a consulting relationship or continuing consulting relationship between the Participant and the Company or any Subsidiary. The Administrator, in its absolute discretion, shall determine the effect of all matters and questions relating to Termination of Consultancy, including, but not by way of limitation, the question of whether a particular leave of absence constitutes a Termination of Consultancy. Notwithstanding any other provision of the Plan, the Company or any Subsidiary has an absolute and unrestricted right to terminate a Consultant's service at any time for any reason whatsoever, with or without cause, except to the extent expressly provided otherwise in writing.

[1] For the avoidance of doubt, the term "Option" as used herein only describes options granted pursuant to the Stock Option Grant Notice to which this Agreement is an Exhibit.

(i) "***Termination of Directorship***" shall mean the time when the Participant, if he or she is or becomes an Independent Director, ceases to be a Director for any reason, including, but not by way of limitation, a termination by resignation, failure to be elected, death or retirement. The Board, in its sole and absolute discretion, shall determine the effect of all matters and questions relating to Termination of Directorship with respect to Independent Directors.

(j) "***Termination of Employment***" shall mean the time when the employee-employer relationship between the Participant and the Company or any Subsidiary is terminated for any reason, with or without Cause, including, but not by way of limitation, a termination by resignation, discharge, death, disability or retirement; but excluding: (i) terminations where there is a simultaneous reemployment or continuing employment of the Participant by the Company or any Subsidiary, and (ii) terminations where there is a simultaneous establishment of a consulting relationship or continuing consulting relationship between the Participant and the Company or any Subsidiary. The Administrator, in its absolute discretion, shall determine the effect of all matters and questions relating to Termination of Employment, including, but not by way of limitation, the question of whether a particular leave of absence constitutes a Termination of Employment; provided, however, that, if this Option is an Incentive Stock Option, unless otherwise determined by the Administrator in its discretion, a leave of absence, change in status from an employee to an independent contractor or other change in the employee-employer relationship shall constitute a Termination of Employment if, and to the extent that, such leave of absence, change in status or other change interrupts employment for the purposes of Section 422(a)(2) of the Code and the then applicable regulations and revenue rulings under said Section.

(k) "***Termination of Services***" shall mean the time when (i) every relationship between the Participant and the Company has been terminated by a Termination of Consultancy, Termination of Directorship and/or Termination of Employment, as applicable, and (ii) the Participant is no longer an Eligible Person under the Plan.

1.2 <u>Incorporation of Terms of Plan</u>. The Option is subject to the terms and conditions of the Plan which are incorporated herein by reference. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan shall control.

ARTICLE II.

GRANT OF OPTION

2.1 <u>Grant of Option</u>. In consideration of the Participant's future employment with or service to the Company or a Subsidiary and for other good and valuable consideration, effective as of the Grant Date set forth in the Grant Notice (the "***Grant Date***"), the Company irrevocably grants to the Participant the Option to purchase any part or all of an aggregate of the number of shares of Stock set forth in the Grant Notice, upon the terms and conditions set forth in the Plan and this Agreement. Unless designated as a Non-Qualified Stock Option in the Grant Notice, the Option shall be an Incentive Stock Option to the maximum extent permitted by law.

2.2 <u>Exercise Price</u>. The exercise price of the shares of Stock subject to the Option shall be as set forth in the Grant Notice, without commission or other charge; *provided*, *however*, that the price per share of the shares of Stock subject to the Option shall not be less than 100% of the Fair Market Value of a share of Stock on the Grant Date. Notwithstanding the foregoing, if this Option is designated as an Incentive Stock Option and the Participant owns (within the meaning of Section 424(d) of the Code) more than 10% of the total combined voting power of all classes of stock of the Company or any "subsidiary corporation" of the Company or any "parent corporation" of the Company (each within the meaning of Section 424 of the Code), the price per share of the shares of Stock subject to the Option shall not be less than 110% of the Fair Market Value of a share of Stock on the Grant Date.

2.3 Consideration to the Company. In consideration of the grant of the Option by the Company, the Participant agrees to render faithful and efficient services to the Company or any Subsidiary. Nothing in the Plan or this Agreement shall confer upon the Participant any right to continue in the employ or service of the Company or any Subsidiary or shall interfere with or restrict in any way the rights of the Company and its Subsidiaries, which rights are hereby expressly reserved, to discharge or terminate the services of the Participant at any time for any reason whatsoever, with or without Cause, except to the extent expressly provided otherwise in a written agreement between the Company or a Subsidiary and the Participant.

ARTICLE III.

PERIOD OF EXERCISABILITY

3.1 Commencement of Exercisability.

(a) Subject to Sections 3.1(b), 3.1(c) and 3.3, the Option shall become vested and exercisable in such amounts and at such times as are set forth in the Grant Notice.

(b) No portion of the Option which has not become vested and exercisable at the date of the Participant's Termination of Services shall thereafter become vested and exercisable, except as may be otherwise provided by the Administrator or as set forth in a written agreement between the Company and the Participant. **[ALTERNATE PROVISION FOR EXECUTIVE OFFICERS:** No portion of the Option which has not become vested and exercisable at the date of the Participant's Termination of Services shall thereafter become vested and exercisable, except as follows or as may be otherwise provided by the Administrator or as set forth in a written agreement between the Company and the Participant:

If the Participant incurs a termination of employment under any of the circumstances described in Section 5(a)(i) (death) of that certain Employment Agreement between the Participant and the Company effective _______________ (the "Employment Agreement"), Section 5(a)(ii) (Disability) of the Employment Agreement, Section 5(a)(iv) (Resignation for Good Reason of the Employment Agreement or Section 5(a)(v) (Termination without Cause) of the Employment Agreement or if the Participant retires from employment after at least 15 years of service after age 60 or after at least ten years of service after age 65, in each such case vesting will continue after termination of employment as provided below:

Termination Date	**Percent of Remaining Options That May Continue to Vest**
Prior to October 1, 2019	0%
On or after October 1, 2019 but prior to October 1, 2020	20%
On or after October 1, 2020 but prior to October 1, 2021	40%
On or after October 1, 2021 but prior to October 1, 2022	60%
On or after October 1, 2022 but prior to October 1, 2023	80%
On or after October 1, 2023	100%

The percentage of remaining Options permitted to vest will be spread ratably over the vesting schedule.**]**

(c) Notwithstanding Section 3.1(a) of this Agreement and Section 8 of the Plan (but subject to Section 3.1(b) of this Agreement), in the event of a Change in Control Options shall become fully vested and exercisable. Notwithstanding the foregoing, the Administrator may, in good faith and in such manner as it may deem equitable, in its sole discretion, adjust the foregoing Fair Market Value requirements in the event of a dividend or other distribution (whether in the form of cash, Stock, other securities or property), recapitalization, reclassification, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase or exchange of Stock or other securities of the Company, issuance of warrants or other rights to purchase Stock or other securities of the Company, or any unusual or nonrecurring transactions or events affecting the Company or the financial statements of the Company if the adjustment is determined by the Administrator to be appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan or with respect to the Option. For purposes of this Section 3.1, shall take into account the consideration received by the stockholders in connection with a Change in Control or in connection with any other sale of common stock or other equity interests in the Company or any Subsidiary, after taking into account all post-closing adjustments relating to a Change in Control, and assuming the exercise of all vested options and warrants outstanding as of the effective date of such Change in Control (after giving effect to any dilution of securities or instruments arising in connection with such Change in Control); *provided however*, that if the stockholders retain any portion of the common stock following such Change in Control or other sale, the Fair Market Value of such portion of the retained common stock immediately following such Change in Control or other sale shall be deemed “consideration received” for purposes of calculating the proceeds and *provided further* that the Fair Market Value of any non-cash consideration (including stock) received in connection with a Change in Control shall be determined as of the date of such Change in Control.

Notwithstanding Section 3.1(a) of this Agreement and Section 8 of the Plan (but subject to Section 3.1(b) of this Agreement) and notwithstanding Exhibit B to this Agreement, with respect to any portion of the Options that have not otherwise vested prior to the applicable date set forth below: (a) in the event that prior to September 30, 2022, the closing price of the Company's common stock on the New York Stock Exchange exceeded two times the Exercise Price of the Options less the amount of any dividends per share paid after the date hereof on any 60 trading days during any consecutive 12-month period commencing October 1, 2020, then all of the unvested Options will vest 50% on September 30, 2022 and 50% on September 30, 2023, and (b) in the event that the condition in clause (a) is not met but, prior to September 30, 2023, the closing price of the Company's common stock on the New York Stock Exchange exceeds two times the Exercise Price of the Options less the amount of dividends per share paid after the date hereof on any 60 trading days during any consecutive 12-month period commencing October 1, 2021, the remaining portion of the unvested Options will vest on September 30, 2023.

3.2 Duration of Exercisability. The installments provided for in the vesting schedule set forth in the Grant Notice are cumulative. Each such installment which becomes vested and exercisable pursuant to the vesting schedule set forth in the Grant Notice shall remain vested and exercisable until it becomes unexercisable under Section 3.3.

3.3 Expiration of Option. The Option may not be exercised to any extent by anyone after the first to occur of the following events:

(a) The expiration of ten years from the Grant Date; or

(b) If this Option is designated as an Incentive Stock Option and the Participant owned (within the meaning of Section 424(d) of the Code), at the time the Option was granted, more than 10% of the total combined voting power of all classes of stock of the Company or any “subsidiary corporation” of the Company or any “parent corporation” of the Company (each within the meaning of Section 424 of the Code), the expiration of five years from the Grant Date; or

(c) The opening of business on the day of the Participant’s Termination of Employment by reason of a termination by the Company for Cause; **[ALTERNATIVE PROVISION FOR EXECUTIVE OFFICERS:** The opening of business on the day of the Participant's Termination of Services by reason of the Participant's Termination of Employment by reason of a termination by the Company for Cause (as defined in the

Participant's employment agreement, if applicable), unless the Committee, in its discretion, determines that a longer period is appropriate;**]** or

(d) The expiration of six months from the date of the Participant’s Termination of Services, unless such termination occurs by reason of the Participant’s death, Disability or retirement (pursuant to Section 3.3(e)) or is a termination by the Company for Cause (as defined in Participant’s employment agreement), *provided*, *however*, that any portion of this Option that is an Incentive Stock Option shall cease to be an Incentive Stock Option on the expiration of three months from the Participant’s Termination of Services (and shall thereafter be a Non-Qualified Stock Option), *provided*, *further*, that to the extent that the Participant is prohibited from selling shares of Stock pursuant to the Company’s insider trading policy at all times during such six-month period, with the exception of an open trading window of less than seven days, the Option shall expire on the later of (i) the seventh day following the opening of the first open trading window thereafter or (ii) the first anniversary of the Participant’s Termination of Services; **[ALTERNATIVE PROVISION FOR EXECUTIVE OFFICERS:** The expiration of six months from the date of the Participant's Termination of Services, unless such termination occurs by reason of (i) the Participant's death, (ii) the Participant's Disability, (iii) the Participant's retirement (pursuant to Section 3.3(e)), (iv) the Participant's termination for Cause (as defined in the Participant's employment, agreement, if applicable) or(v) if the Participant has an employment agreement that defines a termination for "cause" and/or "good Reason," a termination by the Company without Cause (as defined in the Participant's employment agreement) or a termination by the Participant for Good Reason (as defined in the Participant's employment agreement), *provided, however,* that any portion of this Option that is an Incentive Stock Option shall cease to be an Incentive Stock Option on the expiration of three months from the Participant's Termination of Services (and shall thereafter be a Non-Qualified Stock Option), *provided, further,* that to the extent that the Participant is prohibited from selling shares of Stock pursuant to the Company's insider trading policy at all times during such six-month period, wth the exception of an open trading window of less than seven days, the Option shall expire on the seventh day following the opening of the first open trading window thereafter;**]** or

(e) The expiration of one year from the date of the Participant’s Termination of Services by reason of (i) the Participant’s death or Disability; or (ii) the retirement, after a minimum of ten years of service, of a Participant who is at least 55 years old, *provided*, *however*, that to the extent that the Participant is prohibited from selling shares of Stock pursuant to the Company’s insider trading policy at all times during such one-year period, with the exception of an open trading window of less than seven days, the Option shall expire on the seventh day following the opening of the first open trading window thereafter. **[ALTERNATIVE PROVISION FOR EXECUTIVE OFFICERS:** The expiration of one year from the date of the Participant’s Termination of Services by reason of the retirement, after a minimum of ten years of service, of a Participant who is at least 55 years old, *provided, however*, that to the extent that the Participant is prohibited from selling shares of Stock pursuant to the Company’s insider trading policy at all times during such one-year period, with the exception of an open trading window of less than seven days, the Option shall expire on the seventh day following the opening of the first open trading window thereafter; or**]**

[ADDITIONAL PROVISION FOR EXECUTIVE OFFICERS: (f) The expiration date set forth in clause (a), (i) if the Participant has an employment agreement that defines a termination for "Cause" and/or "Good Reason," and upon a Participant's Termination of Services by the Company without Cause (as defined in Participant's employment agreement or a Termination of Services by the Participant for Good Reason (as defined in Participant's employment agreement) or (ii) upon the Participant's death or Disability or (iii) upon the Participant's retirement from employment after at least 15 years of service after age 60 or after at least ten years of service after age 65.

Notwithstanding the foregoing, if any Option vests after the Participant's Termination of Services for reasons set forth herein pursuant to Section 3.1 and the Participant has a limit of six months or one year following such Termination of Services to exercise the Option pursuant to paragraph (d) or (3), the Participant shall have six months after the Option vests to exercise such Option.**]**

3.4 <u>Special Tax Consequences</u>. The Participant acknowledges that, to the extent that the aggregate Fair Market Value (determined as of the time the Option is granted) of all shares of Stock with respect to which Incentive Stock

Options, including the Option, are exercisable for the first time by the Participant in any calendar year exceeds $100,000, the Option and such other options shall be Non-Qualified Stock Options to the extent necessary to comply with the limitations imposed by Section 422(d) of the Code. The Participant further acknowledges that the rule set forth in the preceding sentence shall be applied by taking the Option and other "incentive stock options" into account in the order in which they were granted, as determined under Section 422(d) of the Code and the Treasury Regulations thereunder. The Participant acknowledges that an Incentive Stock Option exercised more than three months after the Participant's Termination of Employment, other than by reason of death or Disability, will be taxed as a Non-Qualified Stock Option.

ARTICLE IV.

EXERCISE OF OPTION

4.1 Person Eligible to Exercise. Except as provided in Sections 5.2(b), during the lifetime of the Participant, only the Participant may exercise the Option or any portion thereof. After the death of the Participant, any exercisable portion of the Option may, prior to the time when the Option becomes unexercisable under Section 3.3, be exercised by the Participant's personal representative or by any person empowered to do so under the deceased Participant's will or under the then applicable laws of descent and distribution.

4.2 Partial Exercise. Any exercisable portion of the Option or the entire Option, if then wholly exercisable, may be exercised in whole or in part at any time prior to the time when the Option or portion thereof becomes unexercisable under Section 3.3.

4.3 Manner of Exercise. The Option, or any exercisable portion thereof, may be exercised solely by delivery to the Secretary of the Company (or any third party administrator or other person or entity designated by the Company) of all of the following prior to the time when the Option or such portion thereof becomes unexercisable under Section 3.3:

(a) An Exercise Notice in a form specified by the Administrator, stating that the Option or portion thereof is thereby exercised, such notice complying with all applicable rules established by the Administrator;

(b) The receipt by the Company of full payment for the shares of Stock with respect to which the Option or portion thereof is exercised, including payment of any applicable withholding tax, which may be in one or more of the forms of consideration permitted under Section 4.4;

(c) Any other written representations as may be required in the Administrator's reasonable discretion to evidence compliance with the Securities Act or any other applicable law, rule, or regulation; and

(d) In the event the Option or portion thereof shall be exercised pursuant to Section 4.1 by any person or persons other than the Participant, appropriate proof of the right of such person or persons to exercise the Option.

Notwithstanding any of the foregoing, the Company shall have the right to specify all conditions of the manner of exercise, which conditions may vary by country and which may be subject to change from time to time.

4.4 Method of Payment. Payment of the exercise price, and any applicable withholding tax, shall be by any of the following, or a combination thereof, at the election of the Participant:

(a) Cash;

(b) Check;

(c) Broker-Assisted Cash-less Exercise. With the consent of the Administrator, delivery of a notice that the Participant has placed a market sell order with a broker with respect to shares of Stock then issuable upon exercise of the Option, and that the broker has been directed to pay a sufficient portion of the net proceeds of the sale to the Company in satisfaction of the aggregate exercise price; *provided*, that payment of such proceeds is then made to the Company upon settlement of such sale;

(d) Share Surrender. With the consent of the Administrator, surrender of other shares of Stock which (i) in the case of shares of Stock acquired from the Company, have been owned by the Participant for more than six (6) months on the date of surrender (or such other minimum length of time as the Administrator determines from time to time to be necessary to avoid adverse accounting consequences or violation of any applicable law, rule or regulation), and (ii) have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the shares of Stock with respect to which the Option or portion thereof is being exercised; or

(e) Net Exercise. With the consent of the Administrator, surrendered shares of Stock issuable upon the exercise of the Option having a Fair Market Value on the date of exercise equal to the aggregate exercise price of the shares of Stock with respect to which the Option or portion thereof is being exercised.

4.5 Conditions to Issuance of Stock Certificates. The shares of Stock deliverable upon the exercise of the Option, or any portion thereof, may be either previously authorized but unissued shares of Stock or issued shares of Stock which have then been reacquired by the Company. Such shares of Stock shall be fully paid and nonassessable. The Company shall not be required to issue or deliver any shares of Stock purchased upon the exercise of the Option or portion thereof prior to fulfillment of all of the following conditions:

(a) The admission of such shares of Stock to listing on all stock exchanges on which such Stock is then listed;

(b) The completion of any registration or other qualification of such shares of Stock under any state or federal law or under rulings or regulations of the Securities and Exchange Commission or of any other governmental regulatory body, which the Administrator shall, in its absolute discretion, deem necessary or advisable;

(c) The obtaining of any approval or other clearance from any state or federal governmental agency which the Administrator shall, in its absolute discretion, determine to be necessary or advisable;

(d) The receipt by the Company of full payment for such shares of Stock, including payment of any applicable withholding tax, which may be in one or more of the forms of consideration permitted under Section 4.4; and

(e) The lapse of such reasonable period of time following the exercise of the Option as the Administrator may from time to time establish for reasons of administrative convenience.

4.6 Rights as Stockholder. The holder of the Option shall not be, nor have any of the rights or privileges of, a stockholder of the Company in respect of any shares of Stock purchasable upon the exercise of any part of the Option unless and until such shares of Stock shall have been issued by the Company to such holder (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company). No adjustment will be made for a dividend or other right for which the record date is prior to the date the shares of Stock are issued, except as provided in Section 8 of the Plan.

ARTICLE V.

OTHER PROVISIONS

5.1 Administration. The Administrator shall have the power to interpret the Plan and this Agreement and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret, amend or revoke any such rules. All actions taken and all interpretations and determinations made by the Administrator in good faith shall be final and binding upon Participant, the Company and all other interested persons. No member of the Committee or the Board shall be personally liable for any action, determination or interpretation made in good faith with respect to the Plan, this Agreement or the Option.

5.2 Option Transferability.

(a) Except as otherwise set forth in Section 5.2(b), (i) the Option may not be sold, pledged, assigned or transferred in any manner other than by will or the laws of descent and distribution, unless and until the shares of Stock underlying the Option have been issued, and all restrictions applicable to such shares of Stock have lapsed. Neither the Option nor any interest or right therein shall be liable for the debts, contracts or engagements of Participant or his or her successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect, except to the extent that such disposition is permitted by the preceding sentence; and (ii) during the lifetime of Participant, only Participant may exercise the Option or any portion thereof. After the death of Participant, any exercisable portion of the Option may, prior to the time when the Option becomes unexercisable under Section 3.3, be exercised by Participant's personal representative or by any person empowered to do so under the deceased Participant's will or under the then applicable laws of descent and distribution.

(b) Notwithstanding the foregoing, with respect to Participants who are corporate officers or operating presidents, the Administrator may permit any portion of the Option that is not an Incentive Stock Option to be transferred to, exercised by and paid to certain persons or entities related to such Participant, including but not limited to members of such Participant's family, charitable institutions or trusts or other entities whose beneficiaries or beneficial owners are members of such Participant's family and/or charitable institutions, or to such other persons or entities as may be expressly approved by the Administrator, pursuant to such conditions and procedures as the Administrator may establish. Any permitted transfer shall be subject to the condition that the Administrator receive evidence satisfactory to it that the transfer is being made for estate and/or tax planning purposes (or to a "blind trust" in connection with such Participant's termination of employment or service with the Company or a Subsidiary to assume a position with a governmental, charitable, educational or similar non-profit institution) and on a basis consistent with the Company's lawful issue of securities.

5.3 Adjustments. The Participant acknowledges that the Option is subject to modification and termination in certain events as provided in this Agreement and Section 8 of the Plan.

5.4 Notices. Any notice to be given under the terms of this Agreement to the Company shall be addressed to the Company in care of the Secretary of the Company at the address given beneath the signature of the Company's authorized officer on the Grant Notice, and any notice to be given to Participant shall be addressed to Participant at the address given beneath Participant's signature on the Grant Notice. By a notice given pursuant to this Section 5.4, either party may hereafter designate a different address for notices to be given to that party. Any notice which is required to be given to Participant shall, if Participant is then deceased, be given to the person entitled to exercise his or her Option pursuant to Section 4.1 by written notice under this Section 5.4. Any notice shall be deemed duly given when sent via email or when sent by certified mail (return receipt requested) and deposited (with postage prepaid) in a post office or branch post office regularly maintained by the United States Postal Service.

5.5 Titles. Titles are provided herein for convenience only and are not to serve as a basis for interpretation or construction of this Agreement.

5.6 Governing Law; Severability. The laws of the State of Delaware shall govern the interpretation, validity, administration, enforcement and performance of the terms of this Agreement regardless of the law that might be applied under principles of conflicts of laws.

5.7 Conformity to Securities Laws. The Participant acknowledges that the Plan and this Agreement are intended to conform to the extent necessary with all provisions of the Securities Act and the Exchange Act and any and all regulations and rules promulgated by the Securities and Exchange Commission thereunder, and state securities laws and regulations. Notwithstanding anything herein to the contrary, the Plan shall be administered, and the Option is granted and may be exercised, only in such a manner as to conform to such laws, rules and regulations. To the extent permitted by applicable law, the Plan and this Agreement shall be deemed amended to the extent necessary to conform to such laws, rules and regulations.

5.8 Amendments, Suspension and Termination. To the extent permitted by the Plan, this Agreement may be wholly or partially amended or otherwise modified, suspended or terminated at any time or from time to time by the Committee or the Board, *provided*, that, except as may otherwise be provided by the Plan, no amendment, modification, suspension or termination of this Agreement shall adversely affect the Option in any material way without the prior written consent of the Participant.

5.9 Successors and Assigns. The Company may assign any of its rights under this Agreement to single or multiple assignees, and this Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set forth in Section 5.2, this Agreement shall be binding upon Participant and his or her heirs, executors, administrators, successors and assigns.

5.10 Notification of Disposition. If this Option is designated as an Incentive Stock Option, Participant shall give prompt notice to the Company of any disposition or other transfer of any shares of Stock acquired under this Agreement if such disposition or transfer is made (a) within two years from the Grant Date with respect to such shares of Stock or (b) within one year after the transfer of such shares of Stock to him. Such notice shall specify the date of such disposition or other transfer and the amount realized, in cash, other property, assumption of indebtedness or other consideration, by Participant in such disposition or other transfer.

5.11 Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of the Plan or this Agreement, if Participant is subject to Section 16 of the Exchange Act, the Plan, the Option and this Agreement shall be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3 of the Exchange Act) that are requirements for the application of such exemptive rule. To the extent permitted by applicable law, this Agreement shall be deemed amended to the extent necessary to conform to such applicable exemptive rule.

5.12 Not a Contract of Employment. Nothing in this Agreement or in the Plan shall confer upon the Participant any right to continue to serve as an employee or other service provider of the Company or any of its Subsidiaries.

5.13 Entire Agreement. The Plan, the Grant Notice and this Agreement (including all Exhibits thereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and Participant with respect to the subject matter hereof.

5.14 Section 409A. Notwithstanding any other provision of the Plan, this Agreement or the Grant Notice, the Plan, this Agreement and the Grant Notice shall be interpreted in accordance with, and incorporate the terms and conditions required by, Section 409A of the U.S. Internal Revenue Code of 1986, as amended (together with any Department of Treasury regulations and other interpretive guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the date hereof, "***Section 409A***"). The Committee reserves the right (without the obligation to do so or to indemnify the Participant for the failure to do so) to adopt such amendments to the Plan, this Agreement or the Grant Notice or adopt other policies and procedures (including amendments, policies and procedures with retroactive effect), or take any other actions, as the Committee determines are necessary or appropriate to exempt the Option from Section 409A or to comply with the requirements of Section 409A and thereby avoid the penalty taxes under Section 409A.

EXHIBIT B
FOR USE WITH FIVE YEAR AWARDS

VESTING

Annual Operational Performance per Diluted Share[1]

Fiscal Year (A)	Minimum Vesting (10% Growth) % of Shares Vesting (B)	Minimum Vesting (10% Growth) YE Operating Performance (per Diluted Share) (C)	Maximum Vesting (17.5% Growth) % of Shares Vesting (D)	Maximum Vesting (17.5% Growth) YE Operating Performance (per Diluted Share) (E)
2019	5 %	$ 192.48	20 %	$ 205.60
2020	5 %	$ 211.72	20 %	$ 241.58
2021	5 %	$ 232.90	20 %	$ 283.85
2022	5 %	$ 256.18	20 %	$ 333.53
2023	5 %	$ 281.80	20 %	$ 391.90

1. Annual Operational Performance Vesting. Effective as of the last day of each of the Company's fiscal years 2019-2023 there shall become vested the percentage of shares covered by the Option which is equal to the Annual Amount (as described below). The Options shall become vested and exercisable as of the date that the Administrator verifies the AOP (as defined below); provided, however, the vesting hereunder will be effective as to Participant as of the end of the fiscal year to which such Annual Amount relates (notwithstanding any termination of Participant's employment during the period between the end of such fiscal year and the verification of the AOP and, in such case, notwithstanding the provisions of Section 3.1(b)). For each such fiscal year, the Administrator shall verify the AOP, and shall notify the Company's Chief Executive Officer of its determination with respect thereto, within ten business days after the Administrator receives the Company's audited financial statements for that fiscal year.

X. For each year (the "performance year"), the Annual Amount is zero if the Annual Operational Performance per Diluted Share ("AOP") with respect to such year is less than the amount indicated for such year in column (C) and otherwise shall be equal to the amount indicated for such year in column (B) plus the product of (a) the excess of (1) the amount indicated for such year in column (D) over (2) the amount indicated for such year in column (B) and (b) the ratio of (1) the excess of (x) the AOP with respect to the year (but not more than the amount indicated in Column (E) for such year) over (y) the amount indicated for such year in column (C) to (2) the excess of (x) the amount indicated for such year in column (E) over (y) the amount indicated for such year in column (C).

Y. In calculating the AOP in Section X. above for any performance year there shall also be taken into account any AOP in any of the two prior performance years (starting in fiscal year 2019) which was in excess of the amount indicated in Column (E) for such prior year and has not previously been taken into account hereunder but only if doing so would increase the Annual Amount in such performance year. If the Participant is subsequently awarded options vesting in 2024 and 2025, any AOP during 2022 and 2023 in excess of the amount indicated in Column (E) (and not previously taken into account hereunder) may be used in one or more of the next two following years by treating such excess as AOP in the performance year under the option agreement granting said options.

Z. If the Annual Amount in any performance year is less than the amount indicated in column (D) for such year then an amount equal to the excess of (1) the amount indicated in column (D) for such year over (2) the actual Annual Amount for such year may vest in one or more of the next two following years by treating as AOP in the performance year under Section X. above any excess of AOP in one of such following years over the amount indicated in column (E) for the applicable following year. The portion of any excess AOP amount which is so used may not be used more than once.

2. Adjustments of Operational Performance Objectives. The Operational Performance targets specified in this Exhibit B are based upon certain revenue and expense assumptions about the future business of the Company as of the date the Option is granted. Accordingly, in the event that, after such date, the Administrator determines, in its sole discretion, that any acquisition or disposition of any business by the Company or any dividend or other distribution (whether in the form of cash, Stock, other securities or other property), recapitalization, reclassification, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Stock or other securities of the Company, issuance of warrants or other rights to purchase Stock or other securities of the Company, any unusual or nonrecurring transactions or events affecting the Company, or the financial statements of the Company, or change in applicable laws, regulations, or accounting principles occurs such that an adjustment is determined by the Administrator to be appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan or with respect to the Option, then the Administrator may, in good faith and in such manner as it may deem equitable, adjust the amounts set forth on this Exhibit B (and/or adjust the definitions of EBITDA and Net Debt) to reflect the projected effect of such transaction(s) or event(s) on Operational Performance. Further, in the event that the Company pays a special dividend, the AOP targets shall be adjusted as determined by the Administrator in accordance with past practice.

EXHIBIT B

FOR USE WITH TWO YEAR EXTENSION GRANTS

VESTING

Annual Operational Performance per Diluted Share[1]

	Minimum Vesting (10% Growth)		Maximum Vesting (17.5% Growth)	
Fiscal Year (A)	**% of Shares Vesting (B)**	**YE Operating Performance (per Diluted Share) (C)**	**% of Shares Vesting (D)**	**YE Operating Performance (per Diluted Share) (E)**
2022	12.5 %	$ 256.18	50 %	$ 333.53
2023	12.5 %	$ 281.80	50 %	$ 391.90

1. Annual Operational Performance Vesting. Effective as of the last day of each of the Company's fiscal years 2022-2023 there shall become vested the percentage of shares covered by the Option which is equal to the Annual Amount (as described below). The Options shall become vested and exercisable as of the date that the Administrator verifies the AOP (as defined below); provided, however, the vesting hereunder will be effective as to Participant as of the end of the fiscal year to which such Annual Amount relates (notwithstanding any termination of Participant's employment during the period between the end of such fiscal year and the verification of the AOP and, in such case, notwithstanding the provisions of Section 3.1(b)). For each such fiscal year, the Administrator shall verify the AOP, and shall notify the Company's Chief Executive Officer of its determination with respect thereto, within ten business days after the Administrator receives the Company's audited financial statements for that fiscal year.

X. For each year (the "performance year"), the Annual Amount is zero if the Annual Operational Performance per Diluted Share ("AOP") with respect to such year is less than the amount indicated for such year in column (C) and otherwise shall be equal to the amount indicated for such year in column (B) plus the product of (a) the excess of (1) the amount indicated for such year in column (D) over (2) the amount indicated for such year in column (B) and (b) the ratio of (1) the excess of (x) the AOP with respect to the year (but not more than the amount indicated in Column (E) for such year) over (y) the amount indicated for such year in column (C) to (2) the excess of (x) the amount indicated for such year in column (E) over (y) the amount indicated for such year in column (C).

Y. In calculating the AOP in Section X. above for any performance year there shall also be taken into account any AOP in any of the two prior performance years (starting in fiscal year 2020) which was in excess of the amount indicated in Column (E) for such prior year and has not previously been taken into account hereunder but only if doing so would increase the Annual Amount in such performance year. If the Participant is subsequently awarded options vesting in 2024 and 2025, any AOP during 2022 and 2023 in excess of the amount indicated in Column (E) (and not previously taken into account hereunder) may be used in one or more of the next two following years by treating such excess as AOP in the performance year under the option agreement granting said options.Z. If the Annual Amount in 2021 is less than the amount indicated in column (D) for 2022 then an amount equal to the excess of (1) the amount indicated in column (D) for 2022 over (2) the actual Annual Amount for 2022 may vest in 2023 by treating as AOP in 2022 above any excess of AOP in 2023 over the amount indicated in column (E) for 2023. The portion of any excess AOP amount which is so used may not be used more than once.

2. Adjustments of Operational Performance Objectives. The Operational Performance targets specified in this Exhibit B are based upon certain revenue and expense assumptions about the future business of the Company as of the date the Option is granted. Accordingly, in the event that, after such date, the Administrator determines, in its sole discretion, that any acquisition or disposition of any business by the Company or any dividend or other distribution (whether in the form of cash, Stock, other securities or other property), recapitalization, reclassification, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Stock or other securities of the Company, issuance of warrants or other rights to purchase Stock or other securities of the Company, any unusual or nonrecurring transactions or events affecting the Company, or the financial statements of the Company, or change in applicable laws, regulations, or accounting principles occurs such that an adjustment is determined by the Administrator to be appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan or with respect to the Option, then the Administrator may, in good faith and in such manner as it may deem equitable, adjust the amounts set forth on this Exhibit B (and/or adjust the definitions of EBITDA and Net Debt) to reflect the projected effect of such transaction(s) or event(s) on Operational Performance. Further, in the event that the Company pays a special dividend, the AOP targets shall be adjusted as determined by the Administrator in accordance with past practice.

EXHIBIT C

STOCK RETENTION GUIDELINES

As a condition to receiving the Option grant, Participant acknowledges and agrees to hold a number of shares and/or options with such value and for such period of time as set forth below:

(a) At all times during Participant's continued employment by the Company, Participant shall hold an aggregate amount of Company equity with a value equal to or greater than **$_____** (the "Retention Limit**")[FOR EXECUTIVE OFFICERS ADD:, one-half of which must be held in stock]**. This Retention Limit will supersede any Retention Limit in any prior dated option agreement between the Company and Participant pursuant to the Plan.

For purposes of this Exhibit C, Company equity shall be equal to (i) the Fair Market Value of any Common Stock held by the Participant plus (ii) the value of vested options then held by Participant, whether granted pursuant to the Plan, the Company's 2006 Stock Incentive Plan, the Company's 2003 Stock Option Plan or otherwise, which will be equal to the Fair Market Value of the Common Stock underlying the options over the exercise price.

(b) If at any time after the date hereof the aggregate amount of Company equity held by Participant falls below the Retention Limit because of a decline in the Fair Market Value of the Common Stock, Participant will have three years to reach the Retention Limit before the Administrator may exercise any remedies under paragraph (d).

(c) Participant shall not be obligated to comply with the Retention Limit until five years from the date of grant; provided, however, that notwithstanding the foregoing, Participant may not make any sales of vested Options until the Retention Limit is reached, and thereafter, only to the extent that Participant would, at the time of the sale, be in compliance with the Retention Limit, except that Participants may make sales under 10b5-1 plans in existence on the date hereof so long as such sales would be in compliance with any preexisting Retention Limit.

(d) Participant's failure to hold that number of shares and/or vested options set forth in this Exhibit C shall result in Participant's forfeiture of all unvested Options unless otherwise determined by the Administrator, in its sole discretion.

EXECUTION VERSION

ELEVENTH AMENDMENT TO THE
RECEIVABLES PURCHASE AGREEMENT

This ELEVENTH AMENDMENT TO THE RECEIVABLES PURCHASE AGREEMENT (this "Amendment"), dated as of July 30, 2019, is entered into by and among the following parties:

(i) TRANSDIGM RECEIVABLES LLC, a Delaware limited liability company, as Seller;

(ii) TRANSDIGM, INC., a Delaware corporation, as Servicer;

(iii) PNC BANK, NATIONAL ASSOCIATION, as a Committed Purchaser, as Purchaser Agent for its Purchaser Group and as Administrator ("PNC");

(iv) ATLANTIC ASSET SECURITIZATION LLC ("Atlantic"), as a Conduit Purchaser;

(v) CREDIT AGRICOLE CORPORATE AND INVESTMENT BANK ("CACIB"), as a Committed Purchaser and as Purchaser Agent for its and Atlantic's Purchaser Group; and

(vi) FIFTH THIRD BANK ("Fifth Third"), as a Committed Purchaser and as Purchaser Agent for its Purchaser Group.

Capitalized terms used but not otherwise defined herein (including such terms used above) have the respective meanings assigned thereto in the Receivables Purchase Agreement described below.

BACKGROUND

A. The parties hereto and PNC Capital Markets LLC, as structuring agent, have entered into a Receivables Purchase Agreement, dated as of October 21, 2013 (as amended, restated, supplemented or otherwise modified through the date hereof, the "Receivables Purchase Agreement").

B. Concurrently herewith, the parties hereto are entering into that certain Amended and Restated Fee Letter in connection herewith (the "Amended Fee Letter").

C. The parties hereto desire to amend the Receivables Purchase Agreement as set forth herein.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

SECTION 1. Amendments to the Receivables Purchase Agreement. The Receivables Purchase Agreement is hereby amended to incorporate the changes shown on the marked pages of the Receivables Purchase Agreement attached hereto as Exhibit A.

SECTION 2. Representations and Warranties of the Seller and Servicer. Each of the Seller and the Servicer hereby represents and warrants, as to itself, to the Administrator, each Purchaser and each Purchaser Agent, as follows:

(a) *Representations and Warranties*. Immediately after giving effect to this Amendment, the representations and warranties made by such Person in the Transaction Documents to which it is a party are true and correct as of the date hereof (unless stated to relate solely to an earlier date, in which case such representations or warranties were true and correct as of such earlier date).

(b) *Enforceability*. This Amendment and each other Transaction Document to which it is a party, as amended hereby, constitute the legal, valid and binding obligation of such Person enforceable against such Person in accordance with its respective terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization or other similar laws affecting the enforcement of creditors' rights generally and by general principles of equity, regardless of whether enforceability is considered in a proceeding in equity or at law.

(c) *No Termination Event*. No event has occurred and is continuing, or would result from the transactions contemplated hereby, that constitutes a Purchase and Sale Termination Event, an Unmatured Purchase and Sale Termination Event, a Termination Event or an Unmatured Termination Event.

SECTION 3. Effect of Amendment. All provisions of the Receivables Purchase Agreement and the other Transaction Documents, as expressly amended and modified by this Amendment, shall remain in full force and effect. After this Amendment becomes effective, all references in the Receivables Purchase Agreement (or in any other Transaction Document) to "this Receivables Purchase Agreement", "this Agreement", "hereof", "herein" or words of similar effect referring to the Receivables Purchase Agreement shall be deemed to be references to the Receivables Purchase Agreement as amended by this Amendment. This Amendment shall not be deemed, either expressly or impliedly, to waive, amend or supplement any provision of the Receivables Purchase Agreement other than as set forth herein.

SECTION 4. Effectiveness. This Amendment shall become effective as of the date hereof upon the satisfaction of the following conditions precedent:

(a) The Administrator shall have received counterparts of this Amendment, duly executed by each of the parties hereto.

(b) The Administrator shall have received counterparts of the Amended Fee Letter duly executed by each of the parties thereto.

(c) The Administrator shall have received confirmation that the "Closing Fees" set forth in the Amended Fee Letter have been paid in accordance with the terms thereof.

(d) The Administrator shall have received such other agreements, documents, certificates, instruments and opinions listed on the closing memorandum attached as Exhibit B hereto.

SECTION 5. Counterparts. This Amendment may be executed in any number of counterparts and by different parties on separate counterparts, each of which when so executed shall be deemed to be an original and all of which when taken together shall constitute but one and the same instrument. Delivery of an executed counterpart of a signature page to this Amendment by facsimile or e-mail transmission shall be effective as delivery of a manually executed counterpart hereof.

SECTION 6. GOVERNING LAW. THIS AMENDMENT SHALL BE DEEMED TO BE A CONTRACT MADE UNDER AND GOVERNED BY THE INTERNAL LAWS OF THE STATE OF NEW YORK (INCLUDING FOR SUCH PURPOSE SECTIONS 5-1401 AND 5-1402 OF THE GENERAL OBLIGATIONS LAW OF THE STATE OF NEW YORK).

SECTION 7. Section Headings. The various headings of this Amendment are included for convenience only and shall not affect the meaning or interpretation of this Amendment, the Receivables Purchase Agreement or any provision hereof or thereof.

SECTION 8. Post-Closing Covenant. On or prior to August 9, 2019 (or such later date agreed to in writing by the Administrator), the Seller and Servicer shall deliver to the Administrator and each Purchaser an opinion, in form and substance satisfactory to the Administrator, of special Connecticut counsel to HarcoSemco LLC (f/k/a Harco LLC) with respect to certain security interest matters.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties hereto have executed this Amendment by their duly authorized officers as of the date first above written.

TRANSDIGM RECEIVABLES LLC,
as Seller

By: /s/ Halle F. Terrion
Name: Halle F. Terrion
Title: Secretary

TRANSDIGM, INC.,
as Initial Servicer

By: /s/ Halle F. Terrion
Name: Halle F. Terrion
Title: Secretary

PNC BANK, NATIONAL ASSOCIATION,
as a Committed Purchaser, as a Purchaser Agent and as Administrator

By: /s/ Mike Brown
Name: Mike Brown
Title: Senior Vice President

ATLANTIC ASSET SECURITIZATION LLC,
as a Conduit Purchaser

By: /s/ Konstantina Kourmpetis Name: Konstantina Kourmpetis
Title: Managing Director

By: /s/ Roger Klepper Name: Roger Klepper
Title: Managing Director

CREDIT AGRICOLE CORPORATE AND INVESTMENT BANK,
as a Committed Purchaser and as Purchaser Agent for its and Atlantic Asset Securitization LLC's Purchaser Group

By: /s/ Konstantina Kourmpetis Name: Konstantina Kourmpetis
Title: Managing Director

By: /s/ Roger Klepper
Name: Roger Klepper
Title: Managing Director

FIFTH THIRD BANK,
as a Committed Purchaser and as Purchaser Agent for its Purchaser Group

By: /s/ Patrick Berning _____Name: Patrick Berning
Title: AVP

Exhibit A

[See Attached]

Exhibit B

Closing Memorandum

[See Attached]

Exhibit 21.1

SUBSIDIARIES OF TRANSDIGM GROUP INCORPORATED

TransDigm Inc. is a 100% owned subsidiary of TransDigm Group Incorporated
TransDigm Inc. owns directly or indirectly the following subsidiaries:

Name of Subsidiary	Jurisdiction of Incorporation or Organization
1711 Waterview Pkwy LLC	Delaware
Acme Aerospace, Inc.	Delaware
Adams Rite Aerospace, Inc.	California
Adams Rite Aerospace GmbH	Germany
Advanced Inflatable Products Limited	England
AeroControlex Group, Inc.	Delaware
Aerosonic LLC	Delaware
Air-Sea Survival Equipment Trustee Limited	England
Airborne Acquisition, Inc.	Delaware
Airborne Global, Inc.	Delaware
Airborne Holdings, Inc.	Delaware
Airborne Systems Canada Ltd.	Ontario, Canada
Airborne Systems Group Limited	England
Airborne Systems Holdings Limited	England
Airborne Systems Limited	England
Airborne Systems NA, Inc.	Delaware
Airborne Systems North America Inc.	Delaware
Airborne Systems North America of CA Inc.	Delaware
Airborne Systems North America of NJ Inc.	New Jersey
Airborne Systems Pension Trust Limited	England
Airborne UK Acquisition Limited	England
Airborne UK Parent Limited	England
Aircraft Materials Limited	England
AmSafe, Inc.	Delaware
AmSafe Aviation (Chongqing), Ltd.	China
AmSafe Bridport Ltd.	England
AmSafe Bridport (Kunshan) Co., Ltd.	China
AmSafe Bridport (Private) Ltd.	Sri Lanka
AmSafe Global Holdings, Inc.	Delaware
AmSafe Global Services (Private) Limited	Sri Lanka
Angus Electronics Co.	Delaware
ARA Deutschland GmbH	Germany
ARA Holding GmbH	Germany
Arkwin Industries, Inc.	New York
Armtec Countermeasures Co.	Delaware
Armtec Countermeasures TNO Co.	Delaware
Armtec Defense Products Co.	Delaware
Auxitrol SAS	France
Auxitrol Weston Mexico, S. de R.L. de C.V.	Mexico

Name of Subsidiary	Jurisdiction of Incorporation or Organization
Auxitrol Weston Singapore Pte. Ltd.	Singapore
Auxitrol Weston USA, Inc.	Delaware
Aviation Technologies, Inc.	Delaware
Avionic Instruments LLC	Delaware
Avionics Specialties, Inc.	Virginia
AVISTA, Incorporated	Wisconsin
AvtechTyee, Inc.	Washington
Beta Transformer Mexico, S. de R.L. de C.V.	Mexico
Beta Transformer Technology Corporation	New York
Beta Transformer Technology LLC	Delaware
Breeze-Eastern LLC	Delaware
Bridport-Air Carrier, Inc.	Washington
Bridport Erie Aviation, Inc.	Delaware
Bridport Holdings, Inc.	Delaware
Bridport Ltd.	England
Bruce Aerospace, Inc.	Delaware
CDA InterCorp LLC	Florida
CEF Industries, LLC	Delaware
Champion Aerospace LLC	Delaware
CMC Electronics Aurora LLC	Delaware
CMC Electronics Inc.	Canada
CMC Electronics ME Inc.	Canada
Darchem Engineering Limited	England
Darchem Holdings Limited	England
Data Device Corporation	Delaware
DDC Electronics K.K.	Japan
DDC Electronics Ltd.	England
DDC Electronics Private Limited	India
DDC Elektronik, GmbH	Germany
DDC Electronique, S.A.R.L.	France
DDC Holdings (UK) Limited	England
DDC (United Kingdom) Ltd.	England
Dukes Aerospace, Inc.	Delaware
Edlaw Limited	England
Electromech Technologies LLC	Delaware
Elektro-Metall Export GmbH	Germany
Elektro-Metall Paks KFT	Hungary
EST Defence Company UK Limited	England
Esterline Acquisition Ltd	England
Esterline do Brasil Assessoria e Intermediação Ltda	Brazil
Esterline Europe Company LLC	Delaware
Esterline Foreign Sales Corporation	US Virgin Islands
Esterline International Company	Delaware

Name of Subsidiary	Jurisdiction of Incorporation or Organization
Esterline Mexico, S. de R.L. de C.V.	Mexico
Esterline Services China Ltd.	China
Esterline Technologies Acquisition Ltd	England
Esterline Technologies Corporation	Delaware
Esterline Technologies Europe Limited	England
Esterline Technologies France Holding SAS	France
Esterline Technologies French Acquisition Limited	England
Esterline Technologies Global Limited	England
Esterline Technologies Holdings Limited	England
Esterline Technologies Management France SAS	France
Esterline Technologies SGIP, LLC	Delaware
Esterline Technologies Unlimited	England
Extant Components Group Holdings, Inc.	Delaware
Extant Components Group Intermediate, Inc.	Delaware
Financiere Jupiter	France
GQ Parachutes Limited	England
Guizhou Leach-Tianyi Aviation Electrical Company Ltd	China
HarcoSemco LLC	Connecticut
Hartwell Corporation	California
Hytek Finishes Co.	Delaware
ILC Holdings, Inc.	Delaware
Irvin Aerospace Limited	England
IrvinGQ France SAS	France
Irvin-GQ Limited	England
Janco Corporation	California
Johnson Liverpool LLC	Delaware
Joslyn Sunbank Company, LLC	California
Jupiter SAS	France
Kirkhill Inc.	Delaware
Korry Electronics Co.	Delaware
Kunshan Shield Restraint Systems, Ltd.	China
Leach Holding Corporation	Delaware
Leach International Asia-Pacific Ltd	Hong Kong
Leach International Corporation	Delaware
Leach International Europe S.A.S.	France
Leach International Germany GmbH	Germany
Leach International Mexico S. de R. L. de C. V.	Mexico
Leach International UK Ltd	England
Leach Technology Group, Inc.	Delaware
MarathonNorco Aerospace, Inc.	Delaware
Mason Electric Co.	Delaware

Name of Subsidiary	Jurisdiction of Incorporation or Organization
McKechnie Aerospace DE, Inc.	Delaware
McKechnie Aerospace DE, LP	England
McKechnie Aerospace (Europe) Ltd.	England
McKechnie Aerospace Holdings, Inc.	Delaware
McKechnie Aerospace US LLC	Delaware
Mecanismos de Matamoros S.A. de C.V.	Mexico
Militair Aviation, Ltd.	England
NMC Group, Inc.	California
Nordisk Asia Pacific Limited	Hong Kong
Nordisk Asia Pacific Pte Ltd	Singapore
Nordisk Aviation Products AS	Norway
Nordisk Aviation Products (Kunshan) Ltd.	China
North Hills Signal Processing Corp.	Delaware
North Hills Signal Processing Overseas Corp.	Delaware
Norwich Aero Products Inc.	New York
Palomar Products, Inc.	Delaware
Pascall Electronics Limited	England
Pexco Aerospace, Inc.	Delaware
PneuDraulics, Inc.	California
Pressure Systems International Ltd	England
Racal Acoustics Limited	England
Racal Acoustics, Inc.	Delaware
Rancho TransTechnology Corporation	California
Retainers, Inc.	New Jersey
Schneller Asia Pte. Ltd.	Singapore
Schneller LLC	Delaware
Schneller S.A.R.L.	France
ScioTeq bvba	Belgium
ScioTeq LLC	Delaware
ScioTeq Ltd.	Israel
ScioTeq Pte. Ltd.	Singapore
ScioTeq SAS	France
Semco Instruments, Inc.	Delaware
Shield Restraint Systems, Inc.	Delaware
Shield Restraint Systems Ltd.	England
Signal Processing Matamoros S.A. de C.V.	Mexico
Skandia, Inc.	Illinois
Skurka Aerospace, Inc.	Delaware
Souriau Dominican Republic, LTD	Bermuda
Souriau Germany GmbH	Germany
Souriau India Private Ltd.	India
Souriau Italy S.R.L.	Italy
Souriau Japan KK	Japan
Souriau Maroc	Morocco

Name of Subsidiary	Jurisdiction of Incorporation or Organization
Souriau S.A.S.	France
Souriau UK Limited	England
Souriau USA, Inc.	Delaware
SSP Industries	California
Sunbank de Mexico S. de R.L. de C.V.	Mexico
Sunbank Family of Companies, LLC	California
Symetrics Industries, LLC	Florida
Symetrics Technology Group, LLC	Florida
TA Aerospace Co.	California
TA Mfg Limited	England
Tactair Fluid Controls, Inc.	New York
TDG ESL Holdings Inc.	Delaware
TDG France Ultimate Parent SAS	France
TDG Germany GmbH	Germany
TDG Netherlands BV	Netherlands
TEAC Aerospace Holdings, Inc.	Delaware
TEAC Aerospace Technologies, Inc.	Delaware
Technical Airborne Components Industries SPRL	Belgium
Technocontact SAS	France
Telair International AB	Sweden
Telair International GmbH	Germany
Telair International LLC	Delaware
Telair International Services PTE Ltd	Singapore
Telair US LLC	Delaware
Texas Rotronics, Inc.	Texas
TransDigm (Barbados) SRL	Barbados
TransDigm Canada ULC	Canada
TransDigm European Holdings Limited	England
TransDigm Ireland Ltd.	Ireland
TransDigm Receivables LLC	Delaware
TransDigm Technologies India Private Limited	India
TransDigm UK Holdings plc	UK
Transicoil (Malaysia) Sendirian Berhad	Malaysia
Transicoil LLC	Delaware
TREALITY SVS LLC	Delaware
TTERUSA, Inc.	New Jersey
Wallop Industries Limited	England
Weston Aerospace Ltd	England
Whippany Actuation Systems, LLC	Delaware
XCEL Power Systems Ltd.	England
Young & Franklin Inc.	New York

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

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

(1) Registration Statements (Form S-8 No. 333-174122 and Form S-8 No. 333-152847) pertaining to the TransDigm Group Incorporated 2006 Stock Incentive Plan,

(2) Registration Statement (Form S-8 No. 333-132808) pertaining to the TransDigm Group Incorporated 2006 Stock Incentive Plan and the TransDigm Group Fourth Amended and Restated 2003 Stock Option Plan, as amended, and

(3) Registration Statement (Form S-8 No. 333-200204) pertaining to the TransDigm Group 2014 Stock Option Plan;

of our reports dated November 19, 2019, with respect to the consolidated financial statements and schedule of TransDigm Group Incorporated and the effectiveness of internal control over financial reporting of TransDigm Group Incorporated included in this Annual Report (Form 10-K) of TransDigm Group Incorporated for the year ended September 30, 2019.

/s/ Ernst & Young LLP

Cleveland, Ohio
November 19, 2019

Exhibit 31.1

CERTIFICATION

I, Kevin Stein, certify that:

1. I have reviewed this annual report on Form 10-K of TransDigm Group Incorporated;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's fourth fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors:

   (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 19, 2019

/s/ Kevin Stein

Name: Kevin Stein

Title: President, Chief Executive Officer and Director

(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION

I, Michael Lisman, certify that:

1. I have reviewed this annual report on Form 10-K of TransDigm Group Incorporated;

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

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

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

   (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's fourth fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors:

   (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 19, 2019

/s/ Michael Lisman

Name: Michael Lisman
Title: Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of TransDigm Group Incorporated (the “Company”) for the fiscal year ended September 30, 2019 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Kevin Stein, President, Chief Executive Officer and Director (Principal Executive Officer), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

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

Date: November 19, 2019

/s/ Kevin Stein

Name: Kevin Stein
Title: President, Chief Executive Officer and Director
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of TransDigm Group Incorporated (the “Company”) for the fiscal year ended September 30, 2019 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Michael Lisman, Chief Financial Officer (Principal Financial Officer) certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

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

Date: November 19, 2019

/s/ Michael Lisman

Name: Michael Lisman
Title: Chief Financial Officer
(Principal Financial Officer)