
100
TWIN DISC®
YEARS

Company engineers work hand-in-hand with customers and manufacturers to design products with characteristics unique to their specific applications.

Twin Disc supplies the commercial, pleasure craft and military segments of the marine market with transmissions, surface drives, electronic controls, propellers and boat management systems.

Its off-highway transmission products include power take-offs, mechanical, hydraulic and modulating clutches and control systems. They serve agricultural, environmental, energy and natural resources markets, as well as all-terrain specialty vehicle and military applications.

OUR HISTORY
SPEAKS TO OUR FUTURE

COVER STORY: As Twin Disc celebrates its 100th anniversary and enjoys this prosperous year, its longevity and success warrant a retrospective of the product introductions that have propelled the company to this point.

Our steadfastness and growth as an independent company are rooted in our intimate understanding of customer needs and developing innovative products that allow machines, off-highway vehicles and boats to accomplish more work, more reliably, more profitably.

Each generation of leadership has demonstrated a keen market awareness, an astute understanding of customers' operating situations, and a commitment to inventive engineering.

Every Twin Disc product reflects an imaginative concept, intelligently engineered and precisely manufactured from quality materials. This philosophy has resulted in power transmission products renowned for their performance, durability and longevity.

Our esteemed history will benefit our company's, customers' and our shareholders' futures.



TWIN DISC, INCORPORATED

IS AN INTERNATIONAL MANUFACTURER AND DISTRIBUTOR OF HEAVY-DUTY OFF-HIGHWAY POWER TRANSMISSION EQUIPMENT.



FINANCIAL HIGHLIGHTS

	2016	2017	2018
Net Sales	$166,282	$168,182	$240,733
Net (Loss) Income	(13,104)	(6,294)	9,528
Basic (Loss) Income Per Share	(1.17)	(0.56)	0.82
Diluted (Loss) Income Per Share	(1.17)	(0.56)	0.82
Dividends Per Share	0.18	—	—
Average Basic Shares Outstanding For The Year	11,202,752	11,239,474	11,294,914
Average Diluted Shares Outstanding For The Year	11,202,752	11,239,474	11,395,072

In thousands of dollars except per share and shares outstanding statistics.

SALES AND EARNINGS BY QUARTER

2018	1ST QTR	2ND QTR	3RD QTR	4TH QTR	YEAR
Net Sales	$45,064	$56,546	$65,349	$73,744	$240,733
Gross Profit	13,895	18,126	20,725	27,490	80,236
Net Income (Loss)	3,392	(4,113)	4,308	5,941	9,528
Basic Income (Loss) Per Share	0.29	(0.36)	0.37	0.51	0.82
Diluted Income (Loss) Per Share	0.29	(0.36)	0.37	0.51	0.82
Dividends Per Share	—	—	—	—	—
Stock Price Range (High – Low)	18.91 – 15.58	29.35 – 18.60	31.95 – 21.08	30.29 – 19.30	31.95 – 15.58

2017					
Net Sales	$35,835	$33,672	$45,084	$53,591	$168,182
Gross Profit	9,173	8,949	13,294	16,816	48,232
Net (Loss) Income	(2,696)	(2,912)	(1,849)	1,163	(6,294)
Basic (Loss) Income Per Share	(0.24)	(0.26)	(0.16)	0.10	(0.56)
Diluted (Loss) Income Per Share	(0.24)	(0.26)	(0.16)	0.10	(0.56)
Dividends Per Share	—	—	—	—	—
Stock Price Range (High – Low)	13.34 – 9.35	15.52 – 10.01	21.75 – 14.38	21.27 – 14.81	21.75 – 9.35

In thousands of dollars except per share and stock price range statistics.



TO OUR SHAREHOLDERS

A LETTER FROM JOHN H. BATTEN, CEO

In 2018, we celebrate 100 years in business, a milestone that fewer than one half of one percent of companies achieve. My great-grandfather, P.H. Batten, had the foresight and tenacity to surround himself with curious and loyal peers and ultimately build a business that has succeeded for over a century—a remarkable feat.



P.H. Batten and John Batten at 21st Street Plant ribbon cutting, December 12, 1956.

Our company has grown from humble roots in Racine, Wisconsin, to a global manufacturer and distributor of power transmission equipment. While our history is storied, I assure you that we are on the right path to start the next 100 years; confident in our ability, but not resting on our laurels.

Fiscal 2018 fourth quarter financial results reflect positive momentum across many of our markets and the continued successful execution of our long-term strategic plan. I am pleased by the increase in profitability we achieved during the fourth quarter as a result of investments made to our global manufacturing processes, favorable sales mix, controlled expenses and leveraging fixed costs.

Gross profit percent during the fiscal 2018 fourth quarter was the second highest quarterly result in Twin Disc's history. The 37.7% increase in 2018 fourth quarter sales was primarily due to improved demand for the Company's 8500 Series transmission systems from North American fracking customers and higher sales of aftermarket components. Plus, global demand continued to improve year-over-year across many of the Company's other markets.

100 TWIN DISC YEARS



FARM TRACTOR CLUTCHES (TYPE "A" CLUTCH)

September 12, 1918, the Twin Disc Clutch Company began manufacturing a revolutionary new clutch for farm tractors.

This flywheel clutch was first used by the Wallis Tractor Company and then extensively by Minneapolis Steel & Machinery Company.

In the 1920s and 1930s, the Twin Disc Farm Tractor Clutches were standard equipment on leading agricultural machinery.

1918

TWIN DISC CLUTCH CO.









WWII

THE WORLD AT WAR (MACHINE TOOL CLUTCH)

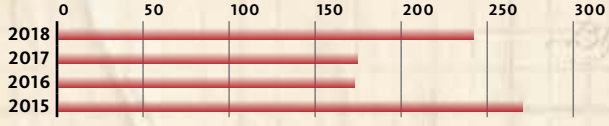
Twin Disc took the fundamental design of its successful Type "A" Flywheel Tractor Clutch and developed a number of variants during the 1920s and 1930s.

The Type "V" Mechanical/Machine Tool Clutch (MTC) became a major component in a wide variety of machines producing products for the Arsenal of Democracy.

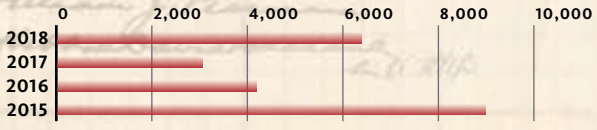
In September 1943 the Racine plant received the Army-Navy "E" Award for production and performance of its machine tool clutches.

In an interview after the war, P.H. Batten stated that, in his opinion, "the Machine Tool Clutch was the most significant product Twin Disc supplied to support the war effort."

NET SALES ($ millions)



CAPITAL EXPENDITURES ($ thousands)



DIVERSIFICATION

After a diligent five-year process, we acquired Veth Propulsion—our largest acquisition ever. Veth Propulsion is a global supplier of main and auxiliary marine propulsion products such as azimuth drives, rudder propellers, thrusters, diesel engines and generator sets. Headquartered in the Netherlands, Veth attained sales of 42.9-million euros in 2017.

Veth Propulsion strategically expands our global market opportunity, increases our size, scale and scope within the marine industry, and diversifies our end-market penetration. This is part of our continual strategy to diversify our geographies, markets and products.

The acquisition was an organic next-step in the relationship between our two companies. In December 2015, Veth Propulsion selected Twin Disc as its distributor for select Asian markets. This unique relationship expanded with a North American distribution partnership in 2016. We've worked with Veth Propulsion for over two years and our companies share similar cultures, based on providing customers with high-quality products and leading design, engineering and manufacturing services.

THE NEXT 100 YEARS

We reported $65.3 million in revenue during our third fiscal quarter, but sales could have increased another $7 million with improved supply processes.

This is not something we take lightly. We have a multi-pronged improvement strategy:

- *Continuous Improvement*
- *Employee Recruitment and Retention*
- *Increased Capacity & Facility Improvements*
- *Supply Chain Improvement*

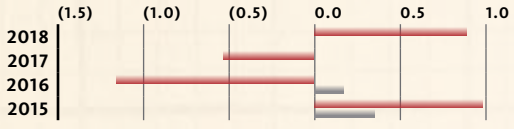
CONTINUOUS IMPROVEMENT

In the fall of 2016, we put a laser-like focus on continuous improvement and launched a Daily Management Program. This decision proved invaluable as we navigated the significant uptick in orders in FY18. Because of our efforts, we increased efficiency by 20%. With a solid foundation in place, we must now continue to make incremental advancements in efficiency, effectiveness and manufacturing flexibility to exceed shareholder and customer expectations.

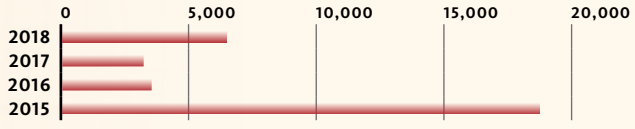




DILUTED EARNINGS (LOSS) per share/DIVIDENDS



NET CASH PROVIDED by operating activities ($ thousands)



EMPLOYEE RETENTION & RECRUITMENT

We anticipated a gradual oil and gas recovery, but the speed with which it has occurred has created a steep demand for manufacturing personnel. With less employees than we had in 2012, we've been able to meet the near-peak production levels for oil and gas transmissions, and we surpass industry-average lead times for delivery.

However, we understand that we need a sustainable, long-term employment solution—and a new generation of talent similar to the workforce that has made us so successful for 100 years. We have an aggressive recruitment program underway to enable us to hire qualified applicants who will help us achieve our production and operational needs.

We also understand that the workforce is evolving. We are collaborating with Gateway Technical College and other similar organizations to develop and provide programming to our workforce in order to equip them with the necessary skills to be successful in 21st century manufacturing.



INCREASED CAPACITY & FACILITY IMPROVEMENTS

The 21st Street plant, the main production facility for the 8500 and 7600 transmissions, is at its physical limitation.

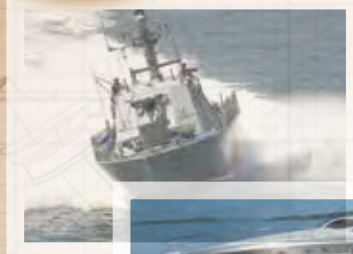
As an immediate action, we have $6 million in new equipment on order to improve production. In addition, we are identifying space for aftermarket, depot facilities and light assembly to allow for more machining and assembly space for our oil and gas transmissions and marine transmissions at 21st Street.

This redistribution of our manufacturing and assembly activities should create a more balanced, flexible, responsive and cost-effective manner in which to bring our products to market. It should also help our distributors, who now handle most of our oil and gas business, garnish more sales because of expedited delivery.

SUPPLY CHAIN IMPROVEMENT

In FY18, suppliers like Eckmann in Racine, WI, made the difference between a good year and a great year. To ensure prompt delivery of quality components, we have instituted a formal and calculated vetting process to grow relationships with these key partners and increase our pool of supplier partners in varying geographies.

100 TWIN DISC YEARS





ARNESON® SURFACE DRIVE & ROLLA™ PROPELLER

Twin Disc acquired Arneson Surface Drives in 1992 to extend its reach into offshore racing, high-performance pleasure craft and coastline patrol and interdiction craft.

With its surface-piercing propeller and vector-thrust turning, an Arneson Drive offers unparalleled top-end propulsion and high-speed maneuverability.

With the acquisition of Switzerland's Rolla SP Propellers in 2004, Twin Disc further enhanced Arneson Drive performance with this line of specialty propellers.



1992





2019 OUTLOOK

Today, Twin Disc is focusing more on controls and system integration instead of individual components; technologies for propulsion controls, thrusters, steering systems and drives instead of basic clutches. Our goal is to be a leader in hybrid technologies for diesel applications in the foreseeable future.

A CENTURY OF GROWTH

Many of you know much of our story and the exceptional people who made it happen. It would be an impossible task to acknowledge all of the people who were so important to our company. We are humbled by the dedication of each of our shareholders, employees, distributors, customers, vendors and community partners and appreciate the critical role that each has played in the overwhelming success of Twin Disc.

Our anniversary is a chance for us to reflect on the inventiveness of the company's founders and my predecessors, as well as the resilience and willingness to adapt that has allowed Twin Disc to flourish for a century. As we move to the next century, we will remain persistent, focused and, of course, rooted in family values.

JOHN H. BATTEN
President, Chief Executive Officer

INDUSTRIAL

HEAVY-DUTY OFF-HIGHWAY PRODUCTS/APPLICATIONS







Existing products had a good year overall, with agricultural and mining segments growing in the U.S. and mining and forestry in Europe.

In fiscal 2018, Twin Disc introduced a strategic array of new product families including wet-clutch PTOs, dry-clutch products and pump drives. These new products continue our momentum to be recognized as a total solution integrator of power transmission products from the engine flywheel to the work output.

Our ability to package systems of products leverages our market prospects in the U.S. and Europe. Construction, mining and forestry in Europe have become significant opportunities, and we have orders for existing and new products.

Since 90% of our products mount on diesel engines, we are looking to ramp up our marketing efforts to rugged-duty off-highway equipment where we can provide more than just a single product. To this end, we have initiated efforts to increase our market visibility in the U.S. and Europe.

Our improved mix of products, plus our ability now to package them, has given us access to large OEMs whom we previously couldn't support because we didn't offer integrated systems. We've made it easier and more cost-effective for an OEM to specify our products.

The brand preference for Twin Disc products extends beyond manufacturing quality, which results in superior performance and long service life. Users appreciate the safety and convenience of our well-designed controls.

THE FUTURE IS ELECTRIFYING

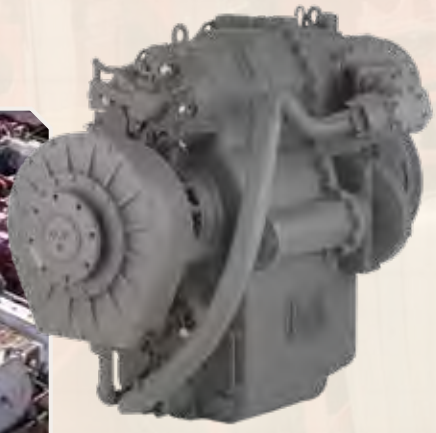
While we continue to expand and promote our diesel-oriented products, we recognize we must understand where our products can be adapted to forthcoming hybrid electric applications. How do we interface our gearboxes and controls with electric motors? We've already begun finding crossover opportunities. Our mission for next year is to continue to aggressively promote our expanded line of diesel-powered products and transmission systems while we pursue the future of hybrid- and full-electric opportunities.

LAND-BASED APPLICATIONS

We are experiencing an oil and gas boom not seen since 2004 when oil was $100 a barrel. Participating in this impressive energy dynamic has caused the number of hydraulic fracturing operations to grow exponentially. Improved fracking technology has become so productive and lucrative, wells require more fracking resources. Whereas a few years ago, a single fracking fleet could handle four rigs, today a fleet is required for every two rigs. And there are some 7,000 drilled wells waiting to be fracked.

This all bodes well for Twin Disc 8500 and 7600 transmissions, which have become staples of hydraulic pumping. Twin Disc's combined transmission sales to the oil and gas industry spiked from 88 units in 2017 to 366 in 2018.





The Twin Disc 7600 oil field transmission offers fracturing operators a durable but lighter hydraulic pumping transmission for mid-range capacity applications.

MARINE MARKET
PRODUCTS/APPLICATIONS

Overall, the marine market segments demonstrated modest growth in 2017, with the majority of improvement in the commercial area.

Chinese offshore oil transportation turned soft because China is aggressively pursuing energy self-sufficiency. However, there was increased demand for MG-5321 transmissions for freight vessels to transport coal from Indonesia.

In Europe, building of self-propelled barges in the Netherlands, Northern Germany and France stimulated transmission business.

Small workboats, tugboats, fire protection vessels and pilot boats provided steady transmission sales globally in conjunction with solid acceptance of Twin Disc's Express Joystick System (EJS®), which makes precise boat propulsion and direction control much easier.

In the U.S., MG-5600 and MG-540 transmission sales for inland waterway push boats and tow boats remained strong. Domestic demand for oil, dry goods and agricultural products stimulated the build of new vessels.

Fishing on the East Coast of the U.S. and in Canada continues to improve as fish stocks rebound, encouraging significant investments in new, traditional-size boats, which are sweet spots for Twin Disc transmission systems.

Unexpected but welcome new business came from an EPA grant for $3 billion to be paid out over ten years to all 50 states. The money must be used for marine and railway investments. Twin Disc customers such as Great Lakes Shipyard & Towing have contracts to build five or six hybrid propulsion tugs; the Twin Disc equipment for them is to be shipped in the fall of 2018. Twin Disc is partnering to develop a customized hybrid solution for these new vessels.

THE HYBRID APPROACH

Currently, Twin Disc is working with two versions of hybrid propulsion. With "Serial Hybrid," a diesel motor powers an electric motor coupled to any QuickShift® marine transmission. "Parallel Hybrid" toggles between electric and diesel power turning the same shaft and working through any QuickShift transmission.

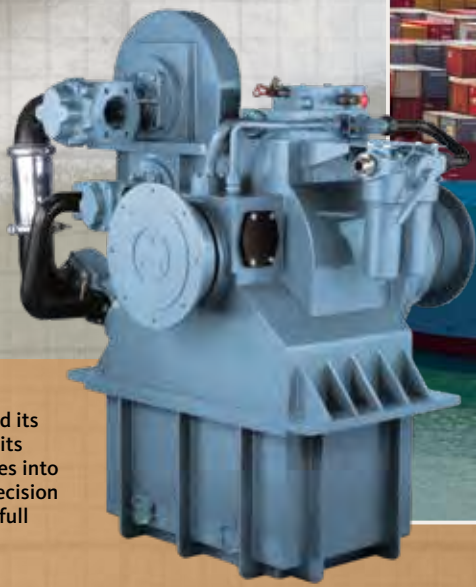
Twin Disc has electric propulsion applications in the works and on the water, such as an electric ferry in the southeast U.S. We are involved in numerous projects revolving around 400 to 500-hp electric/hybrid vessels.

These cumulative opportunities working with customers to create products for specific applications will further expand and define our marine product line.









This year Twin Disc introduced its MCD-4000, which expanded its series of Marine Control Drives into firefighting tugs requiring precision slow-speed maneuvering yet full engine power for fire pumps.

THE HERITAGE GALLERY

Towards the end of 2017 and as our 100th anniversary approached, we thought it appropriate to perform a retrospective of Twin Disc's accomplishments and contributions to the industries it's served for a century. Too often we are preoccupied with the here and now and forget what's made us who we are.







What started as a documentation of our history evolved into an elegant museum presenting a physical timeline of Twin Disc products and technologies and putting them in the context of market dynamics and world events.

This remarkable project was spearheaded by Jane Batten, who assembled an amazing team of designers, contractors, suppliers and Twin Disc personnel to bring the company's history to life.

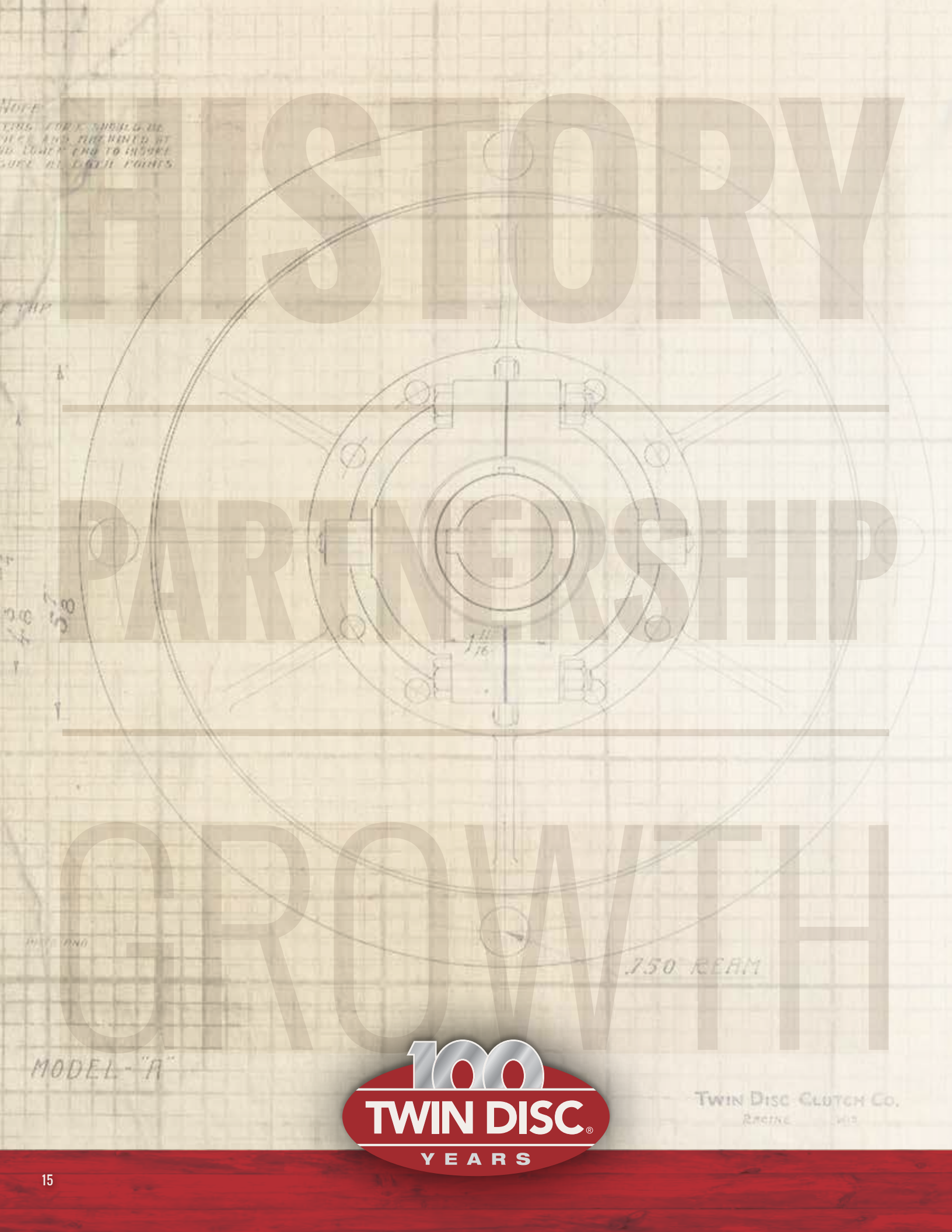
Those fortunate enough to visit the Heritage Gallery will be impressed forever by Twin Disc's past, present and future relevance to all our lives.



HISTORY

PARTNERSHIP

GROWTH



100 TWIN DISC® YEARS

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 June 30, 2018
Commission File Number 1-7635

TWIN DISC, INCORPORATED

(Exact Name of Registrant as Specified in its Charter)

Wisconsin	**39-0667110**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification Number)
1328 Racine Street, Racine, Wisconsin	**53403**
(Address of Principal Executive Office)	(Zip Code)

(262) 638-4000
Registrant's Telephone Number, including area code

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

Title of each class	Name of each exchange on which registered:
Common stock, no par	**The NASDAQ Stock Market, LLC**

Securities registered pursuant to Section 12(g) of the Act:
None
(Title of Class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes [ ] No [√]

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.
Yes [ ] No [√]

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes [√] No [ ]

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).
Yes [√] No [ ]

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation SK is not contained herein, and will not be contained, to the best of the 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, a smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.
Large Accelerated Filer [ ] Accelerated Filer [√] Non-accelerated Filer [ ] Smaller Reporting Company [ ]

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 Act). Yes [ ] No [√]

At December 29, 2017, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the common stock held by non-affiliates of the registrant was $223,519,036. Determination of stock ownership by affiliates was made solely for the purpose of responding to this requirement and registrant is not bound by this determination for any other purpose.

At August 20, 2018, the registrant had 11,534,978 shares of its common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:
Portions of the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which will be filed pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this report, are incorporated by reference into Part III.

TABLE OF CONTENTS

TWIN DISC, INC. – FORM 10-K
FOR THE YEAR ENDED JUNE 30, 2018

PART I

Item 1.	Business	18
Item 1A.	Risk Factors	19
Item 1B.	Unresolved Staff Comments	22
Item 2.	Properties	22
Item 3.	Legal Proceedings	22
Item 4.	Mine Safety Disclosure	22
	Executive Officers of the Registrant	23

PART II

Item 5.	Market for the Registrant's Common Stock and Related Stockholder Matters	24
Item 6.	Selected Financial Data	25
Item 7.	Management's Discussion and Analysis of Financial Condition and Results of Operations	26
Item 7(a).	Quantitative and Qualitative Disclosure About Market Risk	36
Item 8.	Financial Statements and Supplementary Data	37
Item 9.	Change In and Disagreements With Accountants on Accounting and Financial Disclosure	37
Item 9(a).	Controls and Procedures	37
Item 9(b).	Other Information	38

PART III

Item 10.	Directors and Executive Officers of the Registrant	39
Item 11.	Executive Compensation	39
Item 12.	Security Ownership of Certain Beneficial Owners and Management	39
Item 13.	Certain Relationships and Related Transactions, Director Independence	40
Item 14.	Principal Accounting Fees and Services	40

PART IV

Item 15.	Exhibits, Financial Statement Schedules	40–71
	Signatures	72
	Exhibit Index	73–74

PART I

ITEM 1. BUSINESS

Twin Disc, Incorporated ("Twin Disc", or the "Company") was incorporated under the laws of the state of Wisconsin in 1918. Twin Disc designs, manufactures and sells marine and heavy duty off-highway power transmission equipment. Products offered include: marine transmissions, surface drives, propellers and boat management systems as well as power-shift transmissions, hydraulic torque converters, power take-offs, industrial clutches and controls systems. The Company sells its products to customers primarily in the commercial, pleasure craft, and military marine markets as well as in the energy and natural resources, government and industrial markets. The Company's worldwide sales to both domestic and foreign customers are transacted through a direct sales force and a distributor network. The products described above have accounted for more than 90% of revenues in each of the last three fiscal years.

Most of the Company's products are machined from cast iron, forgings, cast aluminum and bar steel which generally are available from multiple sources and which are believed to be in adequate supply.

The Company has applied for patents in both the United States and certain foreign countries on inventions made in the course of its development work for which commercial applications are considered probable. The Company regards its patents collectively as important but does not consider its business dependent upon any one of such patents.

The business is not considered to be seasonal except to the extent that employee vacations and plant shutdowns, particularly in Europe, occur mainly in the months of July and August, curtailing production during that period.

The Company's products receive direct widespread competition, including from divisions of other larger independent manufacturers. The Company also competes for business with parts manufacturing divisions of some of its major customers. The primary competitive factors for the Company's products are design, technology, performance, price, service and availability. The Company's top ten customers accounted for approximately 57% of the Company's consolidated net sales during the year ended June 30, 2018. There was one customer, Palmer Johnson Power Systems, LLC, an authorized distributor of the Company, that accounted for 10% of consolidated net sales in fiscal 2018.

Unfilled open orders for the next six months of $115.0 million at June 30, 2018, compares to $46.4 million at June 30, 2017. Since orders are subject to cancellation and rescheduling by the customer, the six-month order backlog is considered more representative of operating conditions than total backlog. However, as procurement and manufacturing "lead times" change, the backlog will increase or decrease, and thus it does not necessarily provide a valid indicator of the shipping rate. Cancellations are generally the result of rescheduling activity and do not represent a material change in backlog.

Management recognizes that there are attendant risks that foreign governments may place restrictions on dividend payments and other movements of money, but these risks are considered minimal due to the political relations the United States maintains with the countries in which the Company operates or the relatively low investment within individual countries. No material portion of the Company's business is subject to renegotiation of profits or termination of contracts at the election of the U.S. government.

Engineering and development costs include research and development expenses for new product development and major improvements to existing products, and other costs for ongoing efforts to refine existing products. Research and development costs charged to operations totaled $1.6 million, $1.5 million and $1.8 million in fiscal 2018, 2017 and 2016, respectively. Total engineering and development costs were $9.9 million, $8.9 million and $9.5 million in fiscal 2018, 2017 and 2016, respectively.

Compliance with federal, state and local provisions regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, is not anticipated to have a material effect on capital expenditures, earnings or the competitive position of the Company.

The number of persons employed by the Company at June 30, 2018, was 696.

A summary of financial data by segment, geographic area, and classes of products that accounted for more than 10% of consolidated sales revenues for the years ended June 30, 2018, 2017 and 2016 appears in Note J to the consolidated financial statements.

The Company's internet website address is www.twindisc.com. **The Company makes available free of charge (other than an investor's own internet access charges) through its website the Company's Annual Report on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, and amendments to those reports, as soon as reasonably practicable after it electronically files such material with, or furnishes such material to, the United States Securities and Exchange Commission.** In addition, the Company makes available, through its website, important corporate governance materials. This information is also available from the Company upon request. The Company is not including the information contained on or available through its website as a part of, or incorporating such information by reference into, this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS

The Company's business involves risk. The following information about these risks should be considered carefully together with other information contained in this report. The risks described below are not the only risks the Company faces. Additional risks not currently known, deemed immaterial or that could apply to any issuer may also result in adverse results for the Company's business.

As a global company, the Company is subject to currency fluctuations and any significant movement between the U.S. dollar and the euro, in particular, could have an adverse effect on its profitability. Although the Company's financial results are reported in U.S. dollars, a significant portion of its sales and operating costs are realized in euros and other foreign currencies. The Company's profitability is affected by movements of the U.S. dollar against the euro and the other currencies in which it generates revenues and incurs expenses. Significant long-term fluctuations in relative currency values, in particular a significant change in the relative values of the U.S. dollar or euro, could have an adverse effect on the Company's profitability and financial condition. While the long-term impacts of the United Kingdom's vote to exit the European Union (commonly known as "Brexit") are currently unknown, any resulting unfavorable currency impact to the euro could have an adverse effect on the Company's profitability and financial condition.

Certain of the Company's products are directly or indirectly used in oil exploration and oil drilling, and are thus dependent upon the strength of those markets and oil prices. In recent years, the Company has seen significant variations in the sales of its products that are used in oil and energy related markets. The variability in these markets has been defined by the change in oil prices and the global demand for oil. Significant decreases in oil prices and reduced demand for oil and capital investment in the oil and energy markets adversely affect the sales of these products and the Company's profitability. The cyclical nature of the global oil and gas market presents the ongoing possibility of a severe cutback in demand, which would create a significant adverse effect on the sales of these products and ultimately on the Company's profitability.

Many of the Company's product markets are cyclical in nature or are otherwise sensitive to volatile or variable factors. A downturn or weakness in overall economic activity or fluctuations in those other factors could have a material adverse effect on the Company's overall financial performance. Historically, sales of many of the products that the Company manufactures and sells have been subject to cyclical variations caused by changes in general economic conditions and other factors. In particular, the Company sells its products to customers primarily in the pleasure craft, commercial and military marine markets, as well as in the energy and natural resources, government and industrial markets. The demand for the products may be impacted by the strength of the economy generally, governmental spending and appropriations, including security and defense outlays, fuel prices, interest rates, as well as many other factors. Adverse economic and other conditions may cause the Company's customers to forego or otherwise postpone purchases in favor of repairing existing equipment.

In the event of an increase in the global demand for steel, the Company could be adversely affected if it experiences shortages of raw castings and forgings used in the manufacturing of its products. With the continued development of certain developing economies, in particular China and India, the global demand for steel has risen significantly in recent years. The Company selects its suppliers based on a number of criteria, and the Company expects that they will be able to support its growing needs. However, there can be no assurance that a significant increase in demand, capacity constraints or other issues experienced by the Company's suppliers will not result in shortages or delays in their supply of raw materials to the Company. If the Company were to experience a significant or prolonged shortage of critical components from any of its suppliers, particularly those who are sole sources, and could not procure the components from other sources, the Company would be unable to meet its production schedules for some of its key products and would miss product delivery dates which would adversely affect its sales, profitability and relationships with its customers.

The Company continues to face the prospect of increasing commodity costs, including steel, other raw materials and energy that could have an adverse effect on future profitability. In addition, recent developments in tariff regulations in the U.S. and foreign jurisdictions have resulted in uncertainty regarding international trade policies and future commodity prices, contributing to an increased risk of higher commodity costs that could have an adverse impact on the Company's profitability, financial condition and results of operations. The Company's profitability is dependent, in part, on commodity costs. To date, the Company has been successful with offsetting the effects of increased commodity costs through cost reduction programs and pricing actions. However, if material prices were to continue to increase at a rate that could not be recouped through product pricing, it could potentially have an adverse effect on the Company's future profitability.

The current United States administration has signaled support for implementing, and in some instances, has already proposed or taken action with respect to, major changes to certain trade policies, such as the imposition of additional tariffs on imported products and the withdrawal from or renegotiation of certain trade agreements, including the North American Free Trade Agreement. On March 8, 2018, the President of the United States signed an order to impose a tariff of 25% on steel imported from certain countries. On July 1, 2018, Canada implemented retaliatory tariffs on certain U.S. imports, including steel. The Company anticipates that the tariff could result in an increase in its cost of sales and there can be no assurance that the Company will be able to pass any of the increases in raw material costs directly resulting from the tariff to its customers. In addition, there could be additional tariffs imposed by the United States and these could also result in additional retaliatory actions by the United States' trade partners. Given that it procures many of the raw materials that it uses to create its products directly or indirectly from outside of the United States, the imposition of tariffs and other potential changes in U.S. trade policy could increase the cost or limit the availability of such raw materials, which could hurt its competitive position and adversely impact its business,

financial condition and results of operations. In addition, the Company sells a significant proportion of its products to customers outside of the United States. Retaliatory actions by other countries could result in increases in the price of its products, which could limit demand for such products, hurt its global competitive position and have a material adverse effect on the Company's business, financial condition and results of operations.

If the Company were to lose business with any key customers, the Company's business would be adversely affected. Although there was only one customer, Palmer Johnson Power Systems, LLC, that accounted for 10% or more of consolidated net sales in fiscal 2018, deterioration of a business relationship with one or more of the Company's significant customers would cause its sales and profitability to be adversely affected.

The termination of relationships with the Company's suppliers, or the inability of such suppliers to perform, could disrupt its business and have an adverse effect on its ability to manufacture and deliver products. The Company relies on raw materials, component parts, and services supplied by outside third parties. If a supplier of significant raw materials, component parts or services were to terminate its relationship with the Company, or otherwise cease supplying raw materials, component parts, or services consistent with past practice, the Company's ability to meet its obligations to its customers may be affected. Such a disruption with respect to numerous products, or with respect to a few significant products, could have an adverse effect on the Company's profitability and financial condition.

A significant design, manufacturing or supplier quality issue could result in recalls or other actions by the Company that could adversely affect profitability. As a manufacturer of highly engineered products, the performance, reliability and productivity of the Company's products is one of its competitive advantages. While the Company prides itself on putting in place procedures to ensure the quality and performance of its products and suppliers, a significant quality or product issue, whether due to design, performance, manufacturing or supplier quality issue, could lead to warranty actions, scrapping of raw materials, finished goods or returned products, the deterioration in a customer relationship, or other action that could adversely affect warranty and quality costs, future sales and profitability.

The Company faces risks associated with its international sales and operations that could adversely affect its business, results of operations or financial condition. Sales to customers outside the United States approximated 41% of the Company's consolidated net sales for fiscal 2018. The Company has international manufacturing operations in Belgium, Italy, the Netherlands and Switzerland. In addition, the Company has international distribution operations in Singapore, China, Australia, Japan, Italy, Belgium, India and Canada. The Company's international sales and operations are subject to a number of risks, including:

– currency exchange rate fluctuations
– export and import duties, changes to import and export regulations, and restrictions on the transfer of funds
– problems with the transportation or delivery of its products
– issues arising from cultural or language differences
– potential labor unrest
– longer payment cycles and greater difficulty in collecting accounts receivables
– compliance with trade and other laws in a variety of jurisdictions
– changes in tax law

These factors could adversely affect the Company's business, results of operations or financial condition.

A material disruption at the Company's manufacturing facilities in Racine, Wisconsin, could adversely affect its ability to generate sales and meet customer demand. The majority of the Company's manufacturing, based on fiscal 2018 sales, came from its facilities in Racine, Wisconsin. If operations at these facilities were to be disrupted as a result of significant equipment failures, natural disasters, power outages, fires, explosions, adverse weather conditions or other reasons, the Company's business and results of operations could be adversely affected. Interruptions in production would increase costs and reduce sales. Any interruption in production capability could require the Company to make substantial capital expenditures to remedy the situation, which could negatively affect its profitability and financial condition. The Company maintains property damage insurance which it believes to be adequate to provide for reconstruction of its facilities and equipment, as well as business interruption insurance to mitigate losses resulting from any production interruption or shutdown caused by an insured loss. However, any recovery under this insurance policy may not offset the lost sales or increased costs that may be experienced during the disruption of operations. Lost sales may not be recoverable under the policy and long-term business disruptions could result in a loss of customers. If this were to occur, future sales levels and costs of doing business, and therefore profitability, could be adversely affected.

Any failure to meet debt obligations and maintain adequate asset-based borrowing capacity could adversely affect the Company's business and financial condition. The Company's five-year revolving credit facility entered into on June 29, 2018, is secured by certain personal property assets such as accounts receivable, inventory, and machinery and equipment. Under this agreement, the Company's borrowing capacity is based on the eligible balances of these assets and it is required to maintain sufficient borrowing base at all times to secure its outstanding borrowings. As of June 30, 2018, the Company had a borrowing capacity that exceeded its outstanding loan balance (see Note G of the Notes to the Consolidated Financial Statements). Based on

its annual financial plan, the Company believes that it will generate sufficient cash flow levels throughout fiscal 2019 in order to maintain compliance with this borrowing base. However, as with all forward-looking information, there can be no assurance that the Company will achieve the planned results in future periods especially due to the significant uncertainties flowing from the current economic environment. If the Company is not able to achieve these objectives and to meet the required covenants under the agreements, the Company may require forbearance from its existing lenders in the form of waivers and/or amendments of its credit facilities or be required to arrange alternative financing. Failure to obtain relief from covenant violations or to obtain alternative financing, if necessary, would have a material adverse impact on the Company.

The Company has made certain assumptions relating to the acquisition of Veth Propulsion in its forecasts that may prove to be materially inaccurate. The Company has made certain assumptions relating to the forecast level of synergies and associated costs of the acquisition of Veth Propulsion. Such assumptions may be inaccurate based on the information available to the Company or as a result of the failure to realize the expected benefits of the acquisition, higher than expected integration costs, unknown liabilities and global economic and business conditions that may adversely affect the combined company following the completion of the acquisition. The combination of the businesses will require significant management attention, and the Company may incur significant additional integration costs because of integration difficulties and other challenges.

As part of the acquisition of Veth Propulsion, the Company entered into a new credit agreement and significantly increased its indebtedness. The ability to service the requirements of the new debt depends on the ability to generate cash and/or refinance its indebtedness as it becomes due, and depends on many factors, some of which are beyond the Company's control. The Company's ability to make payments on its indebtedness, including those under the new credit agreement, and to fund planned capital expenditures, research and development efforts and other corporate expenses depends on the Company's future operating performance and on economic, financial, competitive, legislative, regulatory and other factors. Many of these factors are beyond its control. The Company cannot assure that its business will generate sufficient cash flow from operations, or operating improvements will be realized or that future borrowings will be available to it in an amount sufficient to enable it to repay its indebtedness or to fund its other operating requirements. Significant delays in its planned capital expenditures may materially and adversely affect the Company's future revenue prospects.

As a result of the acquisition of Veth Propulsion, the Company will likely record a significant amount of goodwill and other intangible assets, and it may never fully realize the full value of these assets. The accounting for the acquisition, including the purchase price allocation is in progress. The Company will likely record a significant amount of goodwill and identifiable intangible assets, including customer relationships, trademarks and developed technologies.

The Company tests goodwill and intangible assets with indefinite useful lives for possible impairment annually during the fourth quarter of each fiscal year or more frequently if events or changes in circumstances indicate that the asset might be impaired. Amortizable intangible assets are periodically reviewed for possible impairment whenever there is evidence that events or changes in circumstances indicate that the carrying value may not be recoverable. Impairment may result from, among other things, (i) a decrease in its expected net earnings; (ii) adverse equity market conditions; (iii) a decline in current market multiples; (iv) a decline in its common stock price; (v) a significant adverse change in legal factors or business climates; (vi) an adverse action or assessment by a regulator; (vii) heightened competition; (viii) strategic decisions made in response to economic or competitive conditions; or (ix) a more-likely-than-not expectation that a reporting unit or a significant portion of a reporting unit will be sold or disposed of. In the event that it determines that events or circumstances exist that indicate that the carrying value of goodwill or identifiable intangible assets may no longer be recoverable, it might have to recognize a non-cash impairment of goodwill or other identifiable intangible assets, which could have a material adverse effect on the Company's consolidated financial condition or results of operations.

The Company recorded significant non-cash goodwill impairment charges in fiscal 2017 and 2016. The Company carries a remaining balance of goodwill in the amount of $2.7 million as of June 30, 2018 after impairment charges recognized in fiscal 2017 and fiscal 2016. Any further deterioration in the industry or business may trigger future impairment charges, which may have a material adverse effect to the Company's financial results.

The Company may experience negative or unforeseen tax consequences. The Company reviews the probability of the realization of its net deferred tax assets each period based on forecasts of taxable income in both the U.S. and foreign jurisdictions. This review uses historical results, projected future operating results based upon approved business plans, eligible carryforward periods, tax planning opportunities and other relevant considerations. Adverse changes in the profitability and financial outlook in the U.S. or foreign jurisdictions may require the creation of a valuation allowance to reduce the Company's net deferred tax assets. Such changes could result in material non-cash expenses in the period in which the changes are made and could have a material adverse impact on the Company's results of operations and financial condition.

Taxing authority challenges and changes to tax laws may lead to tax payments exceeding current reserves. The Company is subject to ongoing tax examinations in various jurisdictions. As a result, the Company may record incremental tax expense based on expected outcomes of such matters. In addition, the Company may adjust previously reported tax reserves based on expected results of these examinations. Such adjustments could result in an increase or decrease to the Company's effective tax rate.

The Tax Cuts and Jobs Act (the "Tax Act") was signed into law in December 2017. The new law made numerous changes to U.S. federal corporate tax law that the Company expects will impact its effective tax rate in future periods. The changes included in the Tax Act are broad and complex. The final impact of the Tax Act may differ from the Company's current estimates, possibly materially, due to, among other things, changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act, any changes in accounting standards for U.S. federal income taxes or related interpretations in response to the Tax Act or any updates or changes to estimates the Company has utilized to calculate the impact. Future changes in tax law in the United States or the various jurisdictions in which the Company operates and income tax holidays could have a material impact on the Company's effective tax rate, foreign rate differential, future income tax expense and cash flows.

Security breaches and other disruptions could compromise the Company's information and expose it to liability, which would cause its business and reputation to suffer. In the ordinary course of its business, the Company collects and stores sensitive data, including its proprietary business information and that of its customers, suppliers and business partners, as well as personally identifiable information of its customers and employees, in its internal and external data centers, cloud services and on its networks. The secure processing, maintenance and transmission of this information is critical to the Company's operations and business strategy. Despite the Company's security measures, its information technology and infrastructure, and that of its partners, may be vulnerable to malicious attacks or breaches due to employee error, malfeasance or other disruptions, including as a result of rollouts of new systems. Any such breach or operational failure would compromise the Company's networks and/or that of its partners and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings and/or regulatory fines or penalties, including, among others, under the European Union's newly enacted General Data Privacy Regulation, disrupt the Company's operations, damage its reputation and/or cause a loss of confidence in the Company's products and services, which could adversely affect its business, financial condition and results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Manufacturing Segment

The Company owns two manufacturing, assembly and office facilities in Racine, Wisconsin, U.S.A., one in Nivelles, Belgium, two in Decima, Italy, and one in Novazzano, Switzerland. The aggregate floor space of these six plants approximates 767,000 square feet. One of the Racine facilities includes office space, which includes the Company's corporate headquarters. The Company leases additional manufacturing, assembly and office facilities in Italy (Limite sull'Arno) and the Netherlands (Papendrecht).

Distribution Segment

The Company also has operations in the following locations, all of which are leased and are used for sales offices, warehousing and light assembly or product service:

Coburg, Oregon, U.S.A.
Kent, Washington, U.S.A.
Edmonton, Alberta, Canada
Burnaby, British Columbia, Canada
Brisbane, Queensland, Australia
Perth, Western Australia, Australia
Gold Coast, Queensland, Australia
Singapore
Shanghai, China
Guangzhou, China
Chennai, India
Coimbatore, India
Saitama City, Japan

The Company believes its properties are well maintained and adequate for its present and anticipated needs.

ITEM 3. LEGAL PROCEEDINGS

Twin Disc is a defendant in several product liability or related claims of which the ultimate outcome and liability to the Company, if any, are not presently determinable. Management believes that the final disposition of such litigation will not have a material impact on the Company's results of operations, financial position or cash flows.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

Executive Officers of the Registrant

Pursuant to General Instruction G(3) of Form 10-K, the following list is included as an unnumbered Item in Part I of this Report in lieu of being included in the Proxy Statement for the Annual Meeting of Shareholders to be held on October 25, 2018.

Name	Age	Position
John H. Batten	53	President, Chief Executive Officer
Jeffrey S. Knutson	53	Vice President – Finance, Chief Financial Officer, Treasurer and Secretary
Malcolm F. Moore	67	Executive Vice President, Chief Operating Officer
Dean J. Bratel	54	Vice President – Sales and Applied Technology
Denise L. Wilcox	61	Vice President – Human Resources
Michael B. Gee	51	Vice President – Engineering
Debbie A. Lange	60	Corporate Controller

Officers are elected annually by the Board of Directors at the Board meeting held in conjunction with each Annual Meeting of the Shareholders. Each officer holds office until a successor is duly elected, or until he/she resigns or is removed from office.

John H. Batten, President, Chief Executive Officer. Effective November 1, 2013, Mr. Batten was named President, Chief Executive Officer. Prior to this promotion, Mr. Batten served as President and Chief Operating Officer since July 2008, Executive Vice President since November 2004, Vice President and General Manager – Marine and Propulsion since October 2001 and Commercial Manager – Marine and Propulsion since 1998. Mr. Batten joined Twin Disc in 1996 as an Application Engineer.

Jeffrey S. Knutson, Vice President – Finance, Chief Financial Officer, Treasurer and Secretary. Mr. Knutson was named Chief Financial Officer and Treasurer in June 2015. Mr. Knutson was named Vice President – Finance, Interim Chief Financial Officer and Interim Treasurer in February 2015. Mr. Knutson was appointed Corporate Secretary in June 2013, and was Corporate Controller from his appointment in October 2005 until August 2015. Mr. Knutson joined the Company in February 2005 as Controller of North American Operations. Prior to joining Twin Disc, Mr. Knutson held Operational Controller positions with Tower Automotive (since August 2002) and Rexnord Corporation (since November 1998).

Malcolm F. Moore, Executive Vice President, Chief Operating Officer. Mr. Moore was appointed to the role of Executive Vice President, Chief Operating Officer effective August 1, 2016. He was hired as Executive Vice President – Operations effective July 1, 2015 after resigning from the Twin Disc Board of Directors on June 30, 2015. Prior to joining Twin Disc, Mr. Moore was President and CEO of Digi-Star LLC, a leading supplier of electronic components and software used in precision agriculture. Prior to leading Digi-Star, he held a variety of positions including Executive Vice President and COO, President and COO, and President and CEO of Gehl Company, a publicly-owned manufacturer and distributor of equipment used in construction and agriculture.

Dean J. Bratel, Vice President – Sales and Applied Technology. Mr. Bratel assumed his current role on August 1, 2016, after serving as Vice President, Sales and Marketing since January 2015. He served as Vice President, Americas (since June 2013), Vice President, Engineering (since November 2004), Director of Corporate Engineering (since January 2003), Chief Engineer (since October 2001) and Engineering Manager (since December 1999). Mr. Bratel joined Twin Disc in 1987.

Denise L. Wilcox, Vice President - Human Resources. Ms. Wilcox was promoted to her current role in November 2004, after serving in the role of Director, Corporate Human Resources since 2002. Prior to that, she held the role of Manager, Compensation and Benefits since her hire in 1998. Before joining the Company, Ms. Wilcox held positions at Johnson International and Runzheimer International.

Michael B. Gee, Vice President – Engineering. Mr. Gee was promoted to his current role in January 2015, after serving in the role of Director of Engineering since July of 2013. Prior to that, he was Chief Engineer (since September 2004) and has held several other positions in the Company, including Engineering Manager, Project Engineer, Design Engineer, and Experimental Engineer.

Debbie A. Lange, Corporate Controller. Ms. Lange was hired as Corporate Controller effective August 4, 2015. Prior to joining the Company, Ms. Lange was the Director of Accounting Research & Special Projects at Sealed Air Corporation (since 2011), a global manufacturer and provider of food packaging solutions, product packaging and cleaning and hygiene solutions. Prior to her role at Sealed Air, Ms. Lange held the position of Director of Global Accounting and Reporting at Diversey, Inc.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON STOCK AND RELATED STOCKHOLDER MATTERS

The Company's common stock is traded on the NASDAQ Global Select Market under the symbol TWIN. The price information below represents the high and low sales prices per quarter from July 1, 2016, through June 30, 2018:

	Fiscal Year Ended June 30, 2018		
Quarter	High	Low	Dividend
First Quarter	$18.91	$15.58	—
Second Quarter	29.35	18.60	—
Third Quarter	31.95	21.08	—
Fourth Quarter	30.29	19.30	—

	Fiscal Year Ended June 30, 2017		
Quarter	High	Low	Dividend
First Quarter	$13.34	$ 9.35	—
Second Quarter	15.52	10.01	—
Third Quarter	21.75	14.38	—
Fourth Quarter	21.27	14.81	—

For information regarding the Company's equity-based compensation plans, see the discussion under Item 12 of this report. As of August 20, 2018, shareholders of record numbered 435. The closing price of Twin Disc common stock as of August 20, 2018, was $25.71.

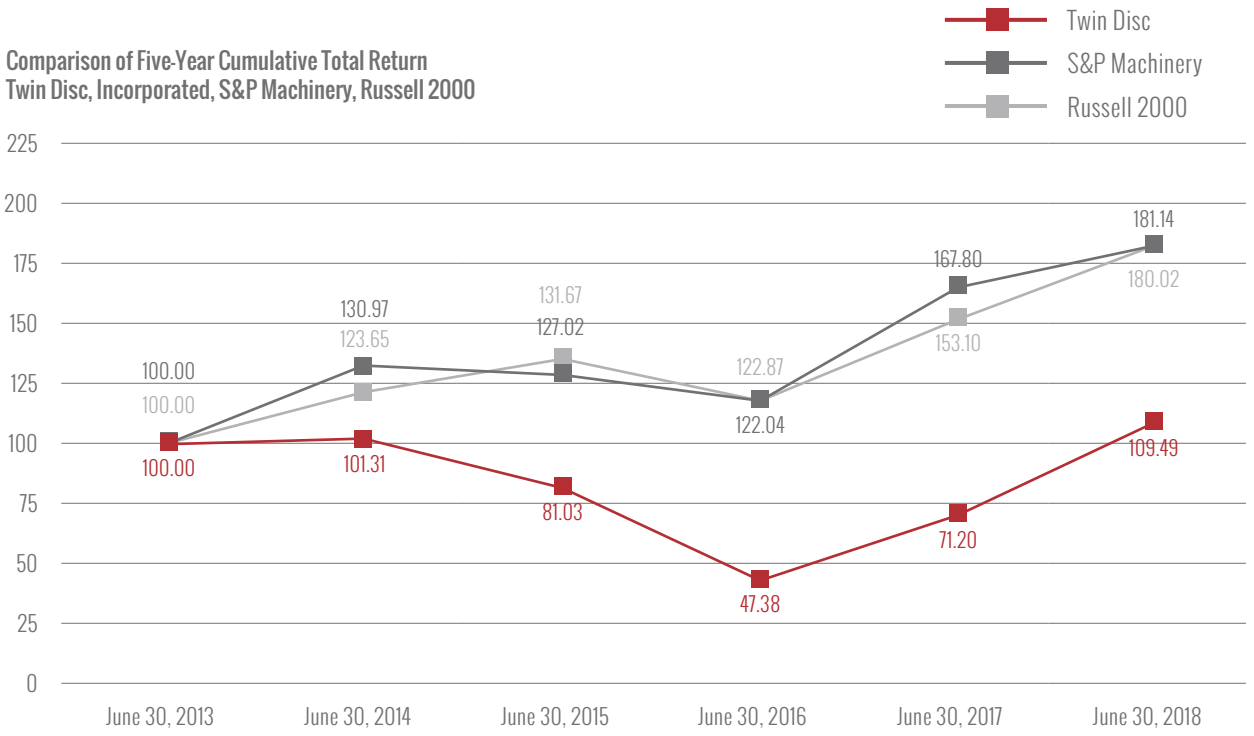
Issuer Purchases of Equity Securities

Period	(a) Total number of shares purchased	(b) Average price paid per share	(c) Total number of shares purchased as part of publicly announced plans or programs	(d) Maximum number of shares that may yet be purchased under the plans or programs
March 31, 2018–April 27, 2018	0	N/A	0	315,000
April 28, 2018–May 25, 2018	0	N/A	0	315,000
May 26, 2018–June 30, 2018	0	N/A	0	315,000
Total	0	N/A	0	315,000

On February 1, 2008, the Board of Directors authorized the purchase of up to 500,000 shares of Common Stock at market values, of which 250,000 shares were purchased during fiscal 2009 and 125,000 shares were purchased during fiscal 2012. On July 27, 2012, the Board of Directors authorized the purchase of an additional 375,000 shares of Common Stock at market values. This authorization has no expiration. During the second quarter of fiscal 2013, the Company purchased 185,000 shares under this authorization. The Company did not make any purchases during fiscal 2016, 2017 and 2018. As of June 30, 2018, 315,000 shares remain authorized for purchase.

Performance Graph

The following table compares total shareholder return over the last five fiscal years to the Standard & Poor's 500 Machinery (Industrial) Index and the Russell 2000 index. The S&P 500 Machinery (Industrial) Index consists of a broad range of manufacturers. The Russell 2000 Index consists of a broad range of 2,000 companies. The Company believes, because of the similarity of its business with those companies contained in the S&P 500 Machinery (Industrial) Index, that comparison of shareholder return with this index is appropriate. Total return values for the Corporation's common stock, the S&P 500 Machinery (Industrial) Index and the Russell 2000 Index were calculated based upon an assumption of a $100 investment on June 30, 2013, and based upon cumulative total return values assuming reinvestment of dividends on a quarterly basis.



ITEM 6. SELECTED FINANCIAL DATA

Financial Highlights

(in thousands, except per share amounts)

	Fiscal years ended June 30,				
Statement of Operations Data:	**2018**	**2017**	**2016**	**2015**	**2014**
Net sales	$240,733	$168,182	$166,282	$265,790	$263,909
Net income (loss)	9,647	(6,115)	(13,013)	11,385	3,870
Net income (loss) attributable to Twin Disc	9,528	(6,294)	(13,104)	11,173	3,644
Basic income (loss) per share attributable to Twin Disc common shareholders	0.82	(0.56)	(1.17)	0.99	0.32
Diluted income (loss) per share attributable to Twin Disc common shareholders	0.82	(0.56)	(1.17)	0.99	0.32
Dividends per share	—	—	0.18	0.36	0.36
Balance Sheet Data (at end of period):					
Total assets	$234,713	$210,898	$213,922	$249,862	$266,985
Total long-term debt	4,824	6,323	8,501	10,231	14,800

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

Note on Forward-Looking Statements

Statements in this report (including but not limited to certain statements in Items 1, 3 and 7) and in other Company communications that are not historical facts are forward-looking statements, which are based on management's current expectations. These statements involve risks and uncertainties that could cause actual results to differ materially from what appears here.

Forward-looking statements include the Company's description of plans and objectives for future operations and assumptions behind those plans. The words "anticipates," "believes," "intends," "estimates," and "expects," or similar anticipatory expressions, usually identify forward-looking statements. In addition, goals established by the Company should not be viewed as guarantees or promises of future performance. There can be no assurance the Company will be successful in achieving its goals.

In addition to the assumptions and information referred to specifically in the forward-looking statements, other factors, including, but not limited to those factors discussed under Item 1A, Risk Factors, could cause actual results to be materially different from what is presented in any forward-looking statements.

Results of Operations *(In thousands)*	2018	% of Sales	2017	% of Sales	2016	% of Sales
Net sales	$240,733		$168,182		$166,282	
Cost of goods sold	160,497		119,950		125,687	
Gross profit	80,236	33.3	48,232	28.7	40,595	24.4
Marketing, engineering and administrative expenses	61,909	25.7	52,773	31.4	57,113	34.3
Restructuring expenses	3,398	1.4	1,791	1.1	921	0.6
Goodwill and other asset impairment charge	—	—	2,646	1.6	7,602	4.6
Other operating expense (income)	—	—	—	—	(445)	(0.3)
Income (loss) from operations	$ 14,929	6.2	$ (8,978)	(5.3)	$(24,596)	(14.8)

Subsequent Event

As previously announced and as further discussed in the Notes to the Consolidated Financial Statements, the Company recently completed its acquisition of Veth Propulsion Holding, B.V. and its wholly-owned subsidiaries ("Veth Propulsion") on July 2, 2018, the first business day of fiscal 2019. Veth Propulsion's sales revenues during its most recently completed fiscal year were approximately $50 million; its revenues are predominantly based in Europe, and those revenues will be reported as part of the Company's marine and propulsion systems product group. Veth Propulsion is expected to be 18–20% of the Company's consolidated revenues in fiscal 2019. The Company financed the acquisition through borrowings under a new credit agreement (described below). As a result of the acquisition and its related transactions, the Company expects that its financial statements, liquidity and capital resources for fiscal 2019 will materially differ from its fiscal 2018 and fiscal 2017 financial statements, liquidity and capital resources.

The following discussion does not include the financial, operational and liquidity impacts of integrating Veth Propulsion into the Company's operations.

Fiscal 2018 Compared to Fiscal 2017

Net Sales

Net sales for fiscal 2018 increased 43.1%, or $72.6 million, to $240.7 million from $168.2 million in fiscal 2017. The significant increase primarily reflects a sustained improvement in North American demand for the Company's oil and gas related transmission products. Following a significant decline in fiscal 2015, this market recovery began in the second half of fiscal 2017 and has sustained through fiscal 2018. The increased demand reflects strong improvement in both forward market and after market activity. Beyond oil and gas, the Company is seeing positive trends in nearly all of its markets. In particular, global demand for commercial marine and industrial products has shown strong improvement, while pleasure craft demand remains steady. Currency translation had a $5.3 million favorable impact on fiscal 2018 sales.

Sales at our manufacturing segment increased 47.7%, or $69.9 million, versus the same period last year. In the current fiscal year, the Company's North American manufacturing operation, the largest, experienced a 65.8% increase in sales compared to fiscal 2017. The primary driver for this significant increase was improved demand for the Company's oil and gas related products, both new units and aftermarket service parts, throughout the fiscal year. This increase is driven by improving oil prices and consistent production levels requiring reinvestment in capital equipment following a lengthy pause created by the decline in oil prices starting in fiscal 2015. The Company's Italian manufacturing operations, which had been adversely impacted by recent softness in the European megayacht and industrial markets, experienced a solid increase of 13.4% compared to the prior fiscal year. The Company's Belgian manufacturing operation saw a 33.5% increase in sales in fiscal 2018 as the marine markets served by this operation began to improve. The Company's Swiss manufacturing operation, which supplies customized propellers for the global megayacht and patrol boat markets, experienced a 5.2% increase in sales, primarily due to improvements in the global patrol boat market.

Sales at our distribution segment were up 24.9%, or $16.9 million, compared to fiscal 2017. The Company's distribution operation in Singapore, its largest Company-owned distribution operation, experienced a 37.8% increase in sales due to a recovery in demand for the Company's commercial marine products. The Company's distribution operation in the Northwest of the United States and Southwest of Canada experienced an increase in sales of 44.9% on the improved activity in the North American oil and gas market throughout fiscal 2018. The Company's distribution operation in Australia, which provides boat accessories, propulsion and marine transmission systems primarily for the pleasure craft market, saw sales improve by 11.9%, driven by improved activity in the Australian pleasure craft market over the prior fiscal year.

Net sales for the Company's marine transmission and propulsion systems were up 5.6% compared to the prior fiscal year. This increase reflects increasing demand for the Company's commercial marine products, led by the Asian and North American markets. In the off-highway transmission market, the remarkable year-over-year increase of 152.8% can be attributed primarily to increased shipments of the Company's pressure-pumping transmission systems and components to the North American oil and gas market, reflecting a market recovery that began in the second half of fiscal 2017. The increase experienced in the Company's industrial products of 7.4% was due to improving volume in agriculture, mining and general industrial markets, primarily in the North American and Italian regions.

Geographically, sales to the U.S. and Canada improved 67% in fiscal 2018 compared to fiscal 2017, representing 64% of consolidated sales for fiscal 2018 compared to 55% in fiscal 2017. North American sales benefited primarily from increased demand for oil and gas related products throughout the fiscal year. Sales into China improved nearly 47% compared to fiscal 2017, driven by the combination of improving commercial marine activity and renewed oil and gas demand. China sales represented 5% of 2018 consolidated net sales, which was similar to fiscal 2017. Overall sales into the Asia Pacific market improved 24% compared to fiscal 2017 and represented approximately 15% of sales in fiscal 2018, compared to 17% in fiscal 2017. Sales into the European market improved approximately 10% from fiscal 2017 levels while accounting for 16% of consolidated net sales compared to 21% in fiscal 2017. See Note J of the Notes to the consolidated financial statements for more information on the Company's business segments and foreign operations.

Gross Profit

In fiscal 2018, gross profit increased $32.0 million, or 66.3%, to $80.2 million on a sales increase of $72.6 million. Gross profit as a percentage of sales increased 460 basis points in fiscal 2018 to 33.3%, compared to 28.7% in fiscal 2017. The table below summarizes the gross profit trend by quarter for fiscal years 2018 and 2017:

Gross Profit *($ millions)*	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year
2018	$13.9	$18.1	$20.7	$27.5	$80.2
2017	$ 9.2	$ 8.9	$13.3	$16.8	$48.2
Percentage of Sales					
2018	30.8%	32.1%	31.7%	37.3%	33.3%
2017	25.6%	26.6%	29.5%	31.4%	28.7%

There were a number of factors that impacted the Company's overall gross profit rate in fiscal 2018. Gross profit for the year was primarily impacted by higher volumes and a favorable product mix. The Company estimates the net favorable impact of increased volumes on gross margin in fiscal 2018 was approximately $26.1 million. The favorable shift in product mix, primarily related to the improved North American demand for the Company's oil and gas transmission and aftermarket products, had an estimated favorable impact of $5.8 million.

Marketing, Engineering and Administrative (ME&A) Expenses
Marketing, engineering, and administrative (ME&A) expenses of $61.9 million were up $9.1 million, or 17.3%, compared to the prior fiscal year. As a percentage of sales, ME&A expenses decreased to 25.7% of sales versus 31.4% of sales in fiscal 2017. The increase in fiscal 2018 compared to the prior year was driven by transaction costs associated with the acquisition of Veth Propulsion ($1.8 million), as described in Note R in the Notes to the Consolidated Financial Statements, increased bonus expense ($4.0 million), increased stock based compensation ($1.1 million), additional expenses to achieve volume growth ($2.0 million) and an exchange impact ($1.2 million). These increases were partially offset by a reduction in the global audit fee expense ($0.6 million) and lower pension expense ($0.4 million).

Restructuring of Operations
During the course of fiscal 2018, the Company executed a series of targeted restructuring activities, resulting in a pre-tax restructuring charge of $3.4 million, or $0.30 per diluted share. These actions are a continuation of the Company's efforts to reduce operating costs and improve efficiencies, and relate primarily to headcount reductions and structural changes at the Company's Belgian operation.

Interest Expense
Interest expense of $0.3 million for fiscal 2018 was slightly lower (6.9%) versus fiscal 2017. The average borrowing on the revolver, computed monthly, decreased to $7.3 million in fiscal 2018, compared to $8.4 million in the prior fiscal year. The interest rate on the revolver was a range of 2.22% to 2.80% in the prior fiscal year compared to a range of 2.98% to 4.25% in the current year.

Other Income (Expense), Net and Interest Income
In fiscal 2018, other income (expense), net, was immaterial and relatively unchanged from the prior fiscal year.

Income Taxes
The effective tax rate for the twelve months of fiscal 2018 was 33.1%, which was lower than the prior year rate of 35.8%. The fiscal 2018 rate was impacted by two significant discrete adjustments. During the first quarter of fiscal 2018, the Company recorded a tax benefit of $3.8 million related to the reversal of a valuation allowance in a certain foreign jurisdiction that had been subject to a full valuation allowance. Improvement in operating results, along with a business reorganization which provided favorable tax planning opportunities, allowed for the reversal of this valuation allowance. During the current fiscal year, in compliance with the new Tax Cuts and Jobs Act, the Company recorded a non-cash tax expense of $3.8 million, primarily due to a remeasurement of deferred tax assets and liabilities. In addition, a rate change in Belgium resulted in a $0.4 million non-cash tax expense due to remeasurement of deferred tax assets and liabilities. The mix of earnings by jurisdiction, smaller discrete adjustments and continued operational improvement explain the remaining movement in the Company's effective tax rate.

The Company maintains valuation allowances when it is more likely than not that all or a portion of a deferred tax asset will not be realized. Changes in valuation allowances from period to period are included in the tax provision in the period of change. In determining whether a valuation allowance is required, the Company takes into account such factors as prior earnings history, expected future earnings, carryback and carryforward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset. During fiscal 2018, the Company reported operating income in certain foreign jurisdictions where the loss carryforward period is unlimited. The Company has evaluated the likelihood of whether the net deferred tax assets related to these jurisdictions would be realized and concluded that, based upon recent operational changes implemented: (a) it is more likely than not that all of the deferred tax assets would be realized; and that (b) a full valuation allowance on the balance of deferred tax assets relating to these jurisdictions is no longer necessary. The Company recorded a net decrease in valuation allowance of $3.8 million in fiscal 2018 due to higher income and continued utilization of operating losses in these jurisdictions. Management believes that it is more likely than not that the results of future operations will generate sufficient taxable income and foreign source income to realize all of the deferred tax assets.

Order Rates
As of June 30, 2018, the Company's backlog of orders scheduled for shipment during the next six months (six-month backlog) was $115.0 million, or approximately 148% higher than the six-month backlog of $46.4 million as of June 30, 2017. The Company's backlog improved throughout fiscal 2018 with the increase in North American demand for the Company's oil and gas related products, along with improving demand in the global marine and industrial markets.

Fiscal 2017 Compared to Fiscal 2016

Net Sales

Net sales for fiscal 2017 increased 1.1%, or $1.9 million, to $168.2 million from $166.3 million in fiscal 2016. The slight increase reflects an increase in demand for the Company's oil and gas related products in North America, primarily during the second half of fiscal 2017. Asian demand for the Company's commercial marine products remained depressed, while demand from European customers also remained weak, hampered by local economic concerns and an unfavorable currency dynamic for the Company's U.S. produced goods. Excluding oil and gas applications, North American demand remained relatively stable for the Company's commercial marine and industrial products. Currency translation had a negligible impact on fiscal 2017 sales.

Sales at our manufacturing segment increased 3.9%, or $5.5 million, versus the same period last year. In the current fiscal year, the Company's North American manufacturing operation, the largest, experienced a 15.7% increase in sales compared to fiscal 2016. The primary driver for this significant increase was improved demand for the Company's oil and gas related products, both new units and aftermarket service parts, primarily during the second half of the fiscal year. This increase is driven by stabilizing oil prices and consistent production levels requiring reinvestment in capital equipment following a lengthy pause created by the decline in oil prices starting in fiscal 2015. The Company's Italian manufacturing operations, which have been adversely impacted by the softness in the European megayacht and industrial markets, experienced a sales decrease of 3.7% compared to the prior fiscal year. The Company's Belgian manufacturing operation saw a 19.4% decrease in sales in fiscal 2017 as the marine markets served by this operation continue to struggle. The Company's Swiss manufacturing operation, which supplies customized propellers for the global megayacht and patrol boat markets, experienced a 4.4% increase in sales, primarily due to improvements in the global patrol boat market.

Sales at our distribution segment were down 8.6%, or $6.4 million, compared to fiscal 2016. The Company's distribution operation in Singapore, its largest Company-owned distribution operation, experienced a 26.9% reduction in sales due to a continuing decline in demand for various commercial applications and pressure-pumping transmissions for the Chinese oil and gas market following several years of very strong growth. The Company's distribution operation in the Northwest of the United States and Southwest of Canada experienced an increase in sales of 4.8% on the improved activity in the North American oil and gas market during the second half of the fiscal year. The Company's distribution operation in Australia, which provides boat accessories, propulsion and marine transmission systems primarily for the pleasure craft market, saw sales improve by 8.3%, driven by improved activity in the Australian pleasure craft market over the prior fiscal year.

Net sales for the Company's largest product market, marine transmission and propulsion systems, were down 7.4% compared to the prior fiscal year. This decrease reflects a continuing decline in the Asian commercial marine market and continued weakness in the global pleasure craft market. In the off-highway transmission market, the year-over-year increase of 46.0% can be attributed primarily to increased shipments of the Company's pressure-pumping transmission systems and components to the North American oil and gas market, primarily during the second half of the fiscal year. The decrease experienced in the Company's industrial products of 11.3% was due to reduced volume in agriculture, mining and general industrial markets, primarily in the North American and Italian regions.

Geographically, sales to the U.S. and Canada improved 8% in fiscal 2017 compared to fiscal 2016, representing 55% of consolidated sales for fiscal 2017 compared to 52% in fiscal 2016. North American sales benefited from increased demand for oil and gas related products in the second half of the fiscal year. Sales into China declined 12.0% compared to fiscal 2016, driven by the combination of reduced oil and gas demand and a decline in commercial marine activity. China sales represented 4.7% of 2017 consolidated net sales, down from 5.4% in fiscal 2016 and 7.4% in fiscal 2015. Overall sales into the Asia Pacific market represented approximately 17% of sales in fiscal 2017, compared to 20% in fiscal 2016. Sales into the European market declined approximately 3% from fiscal 2016 levels while accounting for 21% of consolidated net sales compared to 22% in fiscal 2016. See Note J of the Notes to the consolidated financial statements for more information on the Company's business segments and foreign operations.

Gross Profit

In fiscal 2017, gross profit increased $7.6 million, or 18.8%, to $48.2 million on a sales increase of only $1.9 million. Gross profit as a percentage of sales increased 430 basis points in fiscal 2017 to 28.7%, compared to 24.4% in fiscal 2016. The table below summarizes the gross profit trend by quarter for fiscal years 2017 and 2016:

Gross Profit *($ millions)*	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year
2017	$9.2	$ 8.9	$13.3	$16.8	$48.2
2016	$8.2	$11.6	$ 9.6	$11.2	$40.6
Percentage of Sales					
2017	25.6%	26.6%	29.5%	31.4%	28.7%
2016	21.9%	25.9%	23.2%	26.2%	24.4%

There were a number of factors that impacted the Company's overall gross profit rate in fiscal 2017. Gross profit for the year was favorably impacted by higher volumes, a favorable product mix, a favorable exchange impact ($0.3 million) and positive cost reduction efforts. The Company estimates the net favorable impact of increased volumes on gross margin in fiscal 2017 was approximately $0.8 million. The favorable shift in product mix, primarily related to the improved North American demand for the Company's oil and gas transmission products, had an estimated favorable impact of $2.3 million. The remaining improvement in margin ($4.2 million) is due to the continued benefit of cost reduction actions across the global enterprise, along with significant improvements in operating efficiency.

Marketing, Engineering and Administrative (ME&A) Expenses

Marketing, engineering, and administrative (ME&A) expenses of $52.8 million were down $4.3 million, or 7.6%, compared to the prior fiscal year. As a percentage of sales, ME&A expenses decreased to 31.4% of sales versus 34.3% of sales in fiscal 2016. The reduction in fiscal 2017 compared to the prior year was driven by lower pension expense ($0.3 million), reduced corporate development spending ($0.9 million) and the positive impact of an aggressive global cost reduction program ($5.0 million). These savings were partially offset by an increase to bonus expense ($1.6 million) and stock based compensation ($0.3 million).

Restructuring of Operations

During the course of fiscal 2017, the Company executed a series of targeted restructuring activities, resulting in a pre-tax restructuring charge of $1.8 million, or $0.16 per diluted share. These actions are focused on reducing the Company's operating costs due to the challenging global market conditions, and resulted in headcount reductions at the Company's operations in Italy, Belgium, India and the United States.

Goodwill and Other Asset Impairment Charge

For the quarter ended March 31, 2017, the Company performed a review of potential triggering events, such as the continued market softness and operating losses experienced during the quarter, and concluded that there were sufficient qualitative indicators in the third fiscal quarter that made it more likely than not that an impairment of the domestic industrial goodwill may have occurred. The Company completed a full impairment test, the result of which was a full impairment of the goodwill related to the U.S. Industrial business unit ($2.5 million) that remained after the fiscal 2016 impairment. An asset impairment charge of $0.1 million was also recorded related to the restructuring activities in India. See further discussion in Note P in the Notes to the Consolidated Financial Statements.

In fiscal 2016, the Company conducted its annual assessment for goodwill impairment as of June 30, 2016, using updated inputs, including appropriate risk-based, country and company specific weighted average discount rates for all of the Company's reporting units. The analysis identified an impairment in the domestic industrial business and the European propulsion business resulting in a charge of $7.6 million. See further discussion in Note D in the Notes to the Consolidated Financial Statements.

Other Operating Income

During fiscal 2016, the Company sold the distribution rights and assets of its distribution entity covering the southeast U.S. territory for approximately $4.1 million. As a result, a net operating gain of $0.4 million was recorded.

Interest Expense

Interest expense of $0.3 million for fiscal 2017 was down 29% versus fiscal 2016. Interest on the Company's revolving credit facility ("revolver") in fiscal 2017 was level with fiscal 2016 at $0.2 million, as a lower average balance was offset by a slightly higher average interest rate. The average borrowing on the revolver, computed monthly, decreased to $8.4 million in fiscal 2017, compared to $12.3 million in the prior fiscal year. The interest rate on the revolver was a range of 1.20% to 2.21% in the prior fiscal year compared to a range of 2.22% to 2.80% in the current year. The interest expense on the Company's $25 million Senior Note, which carried a fixed rate of 6.05%, totaled $0.2 million in fiscal 2016. The final payment on the Senior Note was made in April 2016.

Other Income (Expense), Net and Interest Income
In fiscal 2017, the decrease in other income (expense), net, was primarily due to lower fixed asset disposal losses when compared to the prior year. Interest income was lower in fiscal 2017 when compared to the prior year due to lower cash balances as the Company paid down long-term debt.

Income Taxes
The effective tax rate for the twelve months of fiscal 2017 was 35.8%, which was significantly lower than the prior year rate of 48.6%. The fiscal 2016 effective tax rate was favorably impacted by a tax strategy which resulted in the recognition of foreign tax credits associated with the repatriation of $9.7 million in cash from our European operations ($2.4 million). Adjusting for this non-recurring tax benefit, the fiscal 2016 effective tax rate would have been 39.1%.

The Company maintains valuation allowances when it is more likely than not that all or a portion of a deferred tax asset will not be realized. Changes in valuation allowances from period to period are included in the tax provision in the period of change. In determining whether a valuation allowance is required, the Company takes into account such factors as prior earnings history, expected future earnings, carryback and carryforward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset. During fiscal 2017, the Company reported operating income in certain foreign jurisdictions where the loss carryforward period is unlimited. The Company has evaluated the likelihood of whether the net deferred tax assets related to these jurisdictions would be realized and concluded that based primarily upon the uncertainty to achieve levels of sustained improvement and uncertain exchange rates in these jurisdictions: (a) it is more likely than not that $3.8 million of deferred tax assets would not be realized; and that (b) a full valuation allowance on the balance of deferred tax assets relating to these jurisdictions continues to be necessary. The Company recorded a net decrease in valuation allowance of $0.7 million in fiscal 2017 due to lower cumulative operating losses in these jurisdictions. Management believes that it is more likely than not that the results of future operations will generate sufficient taxable income and foreign source income to realize the remaining deferred tax assets.

Order Rates
As of June 30, 2017, the Company's backlog of orders scheduled for shipment during the next six months (six-month backlog) was $46.4 million, or approximately 30% higher than the six-month backlog of $35.7 million as of June 30, 2016. The Company's backlog improved during the second half of the fiscal 2017 with the increase in North American demand for the Company's oil and gas related products.

Liquidity and Capital Resources

Fiscal Years 2018, 2017 and 2016
The net cash provided by operating activities in fiscal 2018 totaled $6.5 million, a significant increase ($3.3 million or 105%) from fiscal 2017. The primary driver for the increase is the greatly improved profitability, with net earnings increasing by $15.8 million. The earnings improvement was offset by an increase in working capital required to support the increased volume. Total working capital increased by over $12.0 million in fiscal 2018. The largest increases came in inventory ($17.8 million) and trade receivables ($14.0 million), both driven by the demands of the increased volume in fiscal 2018. Partially offsetting these increases, trade payables also saw a volume related increase ($8.1 million) and accrued expenses grew by $9.8 million with an elevated bonus accrual and other volume related impacts.

The net cash provided by operating activities in fiscal 2017 totaled $3.2 million, a slight decrease ($0.2 million or 6%) from fiscal 2016. The slight change is primarily the result of a significant improvement in net earnings ($6.9 million) being offset by moderating working capital improvements ($8.3 million lower in fiscal 2017), as the prior fiscal year benefited from successful inventory reductions. While inventory improved slightly in fiscal 2017 ($0.4 million), fiscal 2016 saw a $13.7 million improvement driven by declining volumes and strong working capital management. While the accounts receivable balance increased significantly in fiscal 2017 ($6.0 million) on the strong second half sales volume, receivable performance improved in fiscal 2017, with days sales outstanding falling from 66 days at June 30, 2016, to 56 days at June 30, 2017. Accounts payable saw a corresponding volume-driven increase ($6.6 million).

The net cash provided by operating activities in fiscal 2016 totaled $3.4 million, a decrease of $13.7 million, or approximately 80%, versus fiscal 2015. The decrease compared to the prior fiscal year is primarily due to the decline in earnings totaling $24.4 million. This decline was partially offset by reduced working capital. Accounts receivable decreased by $18.4 million, driven by the reduced sales volume and strong collection efforts. The inventory improvement is the successful result of a concerted global effort to manage working capital levels in light of the challenging market conditions. Net inventory as a percentage of the six-month backlog decreased from 232% as of June 30, 2015, to 186% as of June 30, 2016. The decrease in accounts payable reflects the reduced purchasing activity throughout the fiscal year as a result of the reduced volume, while accrued liabilities declined with the payment of severance and bonus obligations.

The net cash used by investing activities primarily represents capital spending activity totaling $6.3 million. The fiscal 2018 capital projects represented an increase of over 100% compared to fiscal 2017. Capital project spending ramped up through the year, following an extended pause in significant investment. The spending focused on machine tools to provide volume and production efficiency, as well as spending on facilities and new product introductions.

The net cash used by investing activities primarily represents capital spending activity totaling $3.1 million. The fiscal 2017 capital projects were again limited to critical replacement and maintenance items and costs related to new product introduction. This was partially offset by proceeds from the sale of certain operating assets, primarily associated with the closure of our India plant.

The net cash provided by investing activities in fiscal 2016 of $1.1 million represents primarily the proceeds from the sale of Twin Disc Southeast in the first quarter of the fiscal year ($3.5 million) and the proceeds from a life insurance policy ($2.0 million), partially offset by relatively modest capital spending activity totaling $4.2 million. The capital projects for fiscal 2016 were limited to key replacement items and high potential new product introductions.

The net cash used by financing activities in fiscal 2018 of $2.1 million consisted primarily of net payments of debt ($1.5 million). During fiscal 2018, the Company did not purchase any shares as part of its Board-authorized stock repurchase program. The Company has 315,000 shares remaining under its authorized stock repurchase plan.

The net cash used by financing activities in fiscal 2017 of $2.4 million consisted primarily of net payments of debt ($2.2 million). During fiscal 2017, the Company did not purchase any shares as part of its Board-authorized stock repurchase program.

The net cash used by financing activities in fiscal 2016 of $8.1 million consisted primarily of dividends paid to shareholders ($2.0 million) and net payments of debt ($5.3 million). During fiscal 2016, the Company did not purchase any shares as part of its Board-authorized stock repurchase program.

Future Liquidity and Capital Resources
On April 22, 2016, the Company entered into a revolving Credit Agreement (the "2016 Credit Agreement") with Bank of Montreal ("BOM"). This agreement permits the Company to enter into loans up to $40 million. This maximum may be increased under the 2016 Credit Agreement by an additional $10 million so long as there exists no default and certain other conditions specified in the 2016 Credit Agreement are satisfied.

In general, each revolving loan under the 2016 Credit Agreement was charged interest at a Eurodollar Rate, as defined. In addition to monthly interest payments, the Company was responsible for paying a quarterly unused fee equal to 0.15% of the average daily unused portion of the revolving credit commitment. The Company could prepay loans subject to certain limitations. Borrowings under the 2016 Credit Agreement were secured by substantially all of the Company's personal property, including accounts receivable, inventory, certain machinery and equipment, intellectual property, and the personal property of Mill-Log Equipment Co., Inc ("Mill-Log"). The Company also pledged 100% of its equity interests in certain domestic subsidiaries and 65% of its equity interests in certain foreign subsidiaries. The Company entered into a security agreement, IP security agreement and pledge agreement with BOM, and Mill-Log entered into a guaranty agreement, guarantor security agreement and pledge agreement with BOM, which collectively granted BOM a security interest in these assets and holdings as administrative agent for itself and other lenders that may enter into the 2016 Credit Agreement. The Company also entered into a negative pledge agreement with BOM, pursuant to which it had agreed not to sell, lease or otherwise encumber real estate that it owned except as permitted by the 2016 Credit Agreement and the negative pledge agreement. Within thirty days upon the occurrence of an event of default (as defined) that was not cured within the prescribed cure period, or if availability under the 2016 Credit Agreement was less than the greater of 15% of the aggregate revolving credit commitments and $6.0 million, the Company and Mill-Log were to execute and deliver mortgages to BOM on all real estate owned by them at such time to further secure borrowings under the 2016 Credit Agreement.

On June 29, 2018, the Company entered into a credit agreement (the "Credit Agreement") with BMO Harris Bank N.A. ("BMO") that provides for the assignment and assumption of the existing loans between the Company and BOM, and subsequent amendments into a term loan (the "Term Loan") and revolving credit loans (each a "Revolving Loan" and, collectively, the "Revolving Loans," and, together with the Term Loan, the "Loans"). Pursuant to the Credit Agreement, BMO agreed to make the Term Loan to the Company in a principal amount not to exceed $35 million, and the Company may, from time to time prior to the maturity date, enter into Revolving Loans in amounts not to exceed, in the aggregate $50 million (the "Revolving Credit Commitment").

The Credit Agreement provides that the Company may elect that the Term Loan and each Revolving Loan to be either "LIBOR Loans" or "Eurodollar Loans", as defined, and bear interest at the applicable rate per the Credit Agreement. This rate as of June 29, 2018, was 4.25%. In addition to the monthly interest payments and any mandatory principal payments required by the Credit Agreement (if applicable), the Company will be responsible for paying a quarterly Revolving Credit Commitment Fee and quarterly Letter of Credit Fees. The Company may prepay the Loans (or any one of the Loans), subject to certain limitations. Borrowings under the Credit Agreement are secured by substantially all of the Company's personal property, including accounts receivable,

inventory, machinery and equipment, intellectual property, and the personal property of Mill-Log, a wholly-owned domestic subsidiary of the Company. The Company has also pledged 100% of its equity interests in certain domestic subsidiaries and 65% of its equity interests in certain foreign subsidiaries. To effect these security interests, the Company and Mill-Log entered into various amendment and assignment agreements that consent to the assignment of certain agreements previously entered into between the Company and Mill-Log with Bank of Montreal in connection with the 2016 Credit Agreement. Specifically, the Company amended and assigned to BMO a Security Agreement, IP Security Agreement, and Pledge Agreement, and Mill-Log amended and assigned to BMO a Guaranty Agreement and Guarantor Security Agreement. The Company also amended and assigned to BMO a Negative Pledge Agreement that it has previously entered into with Bank of Montreal, pursuant to which it agreed not to sell, lease or otherwise encumber real estate that it owns except as permitted by the Credit Agreement and the Negative Pledge Agreement. Upon the occurrence of an Event of Default, BMO may take the following actions upon written notice to the Company: (1) terminate its remaining obligations under the Credit Agreement; (2) declare all amounts outstanding under the Credit Agreement to be immediately due and payable; and (3) demand the Company to immediately Cash Collateralize L/C Obligations in an amount equal to 105% of the aggregate L/C Obligations or a greater amount if BMO determines a greater amount is necessary. If such Event of Default is due to the Company's bankruptcy, BMO may take the three actions listed above without notice to the Company.

The Company's balance sheet remains strong, there are no material off-balance-sheet arrangements, and we continue to have sufficient liquidity for near-term needs. The Company had approximately $45.2 million of available borrowings under the Credit Agreement as of June 30, 2018. The Company expects to continue to generate enough cash from operations, as well as its credit facilities, to meet its operating and investing needs. As of June 30, 2018, the Company also had cash of $15.2 million, primarily at its overseas operations. These funds, with some restrictions and tax implications, are available for repatriation as deemed necessary by the Company. In fiscal 2019, the Company expects to contribute $2.4 million to its defined benefit pension plans, the minimum contribution required.

Net working capital increased $12.0 million, or 14.1%, during fiscal 2018, and the current ratio (calculated as total current assets divided by total current liabilities) decreased from 2.9 at June 30, 2017, to 2.6 at June 30, 2018. The increase in net working capital was primarily driven by volume-driven increases in accounts receivable and inventory, partially offset by increases to trade payables (also volume related) and accrued expenses (volume and annual bonus).

The Company expects capital expenditures to be approximately $14 million - $16 million in fiscal 2019. These anticipated expenditures reflect the Company's plans to ramp up investment in modern equipment to meet volume demands and drive productivity improvements, its global sourcing program and new products.

Management believes that available cash, the BMO credit facility, cash generated from future operations, and potential access to debt markets will be adequate to fund the Company's capital requirements for the foreseeable future.

Off Balance Sheet Arrangements and Contractual Obligations

The Company had no off-balance sheet arrangements, other than operating leases, as of June 30, 2018 and 2017.

The Company has obligations under non-cancelable operating lease contracts and loan agreements for certain future payments. A summary of those commitments follows (in thousands):

Contractual Obligations	Total	Less than 1 Year	1-3 Years	3-5 Years	After 5 Years
Revolving loan borrowing	$4,787	$ —	$ —	$4,787	$ —
Long-term debt, including current maturities	$ 37	$ 3	$ 6	$ 3	$ 25
Operating leases	$7,321	$2,194	$3,068	$1,370	$689

The table above does not include tax liabilities for unrecognized tax benefits totaling $0.8 million, excluding related interest and penalties, as the timing of their resolution cannot be estimated. See Note N of the Notes to the consolidated financial statements for disclosures surrounding uncertain income tax positions.

The Company maintains defined benefit pension plans for some of its operations in the United States and Europe. The Company has established the Benefits Committee (a non-board management committee) to oversee the operations and administration of the defined benefit plans. The Company estimates that fiscal 2019 contributions to all defined benefit plans will total $2.4 million.

Other Matters

Critical Accounting Policies and Estimates

The preparation of this Annual Report requires management's judgment to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the dates of the financial statements, and the reported amounts of revenues and expenses during the reporting period. There can be no assurance that actual results will not differ from those estimates.

The Company's significant accounting policies are described in Note A to the consolidated financial statements. Not all of these significant accounting policies require management to make difficult, subjective, or complex judgments or estimates. However, the policies management considers most critical to understanding and evaluating its reported financial results are the following:

Accounts Receivable

The Company performs ongoing credit evaluations of our customers and adjusts credit limits based on payment history and the customer's credit-worthiness as determined by review of current credit information. We continuously monitor collections and payments from our customers and maintain a provision for estimated credit losses based upon our historical experience and any specific customer-collection issues. In addition, senior management reviews the accounts receivable aging on a monthly basis to determine if any receivable balances may be uncollectible. Although our accounts receivable are dispersed among a large customer base, a significant change in the liquidity or financial position of any one of our largest customers could have a material adverse impact on the collectability of our accounts receivable and future operating results.

Inventory

Inventories are valued at the lower of cost or net realizable value. Cost has been determined by the last-in, first-out (LIFO) method for the majority of the inventories located in the United States, and by the first-in, first-out (FIFO) method for all other inventories. Management specifically identifies obsolete products and analyzes historical usage, forecasted production based on future orders, demand forecasts, and economic trends when evaluating the adequacy of the reserve for excess and obsolete inventory. The adjustments to the reserve are estimates that could vary significantly, either favorably or unfavorably, from the actual requirements if future economic conditions, customer demand or competitive conditions differ from expectations.

Goodwill

Goodwill is tested for impairment annually or more frequently if events or changes in circumstances indicate that an impairment might exist. The Company performs impairment reviews for its reporting units using a fair-value method based on management's judgments and assumptions or third party valuations.

In determining the fair value of our reporting units, management is required to make estimates of future operating results, including growth rates, and a weighted-average cost of capital that reflects current market conditions, among others. The development of future operating results incorporates management's best estimates of current and future economic and market conditions which are derived from a review of past results, current results and approved business plans. Many of the factors used in assessing fair value are outside the control of management, and these assumptions and estimates can change in future periods. While the Company believes its judgments and assumptions were reasonable, different assumptions, economic factors and/or market indicators could materially change the estimated fair values of the Company's reporting units.

The following are key assumptions to the Company's discounted cash flow model:

Business Projections – The Company makes assumptions about the level of sales for each fiscal year including expected growth, if any. This assumption drives its planning for volumes, mix, and pricing. The Company also makes assumptions about its cost levels (e.g., capacity utilization, cost performance, etc.). These assumptions are key inputs for developing its cash flow projections. These projections are derived using the Company's internal business plans that are reviewed during the annual budget process.

Discount Rates – When measuring a possible impairment, future cash flows are discounted at a rate that is consistent with a weighted average cost of capital for a potential market participant. The weighted average cost of capital is an estimate of the overall after-tax rate of return required by equity and debt holders of a business enterprise. There are a number of assumptions that management makes when calculating the appropriate discount rate, including the targeted leverage ratio.

The Company is subject to financial statement risk to the extent the carrying amount of a reporting unit exceeds its fair value. Based upon the goodwill impairment test completed as of the end of June 30, 2018, goodwill was not impaired and no impairment charge was necessary for fiscal 2018. In fiscal 2017, the Company recorded a non-cash impairment charge of $2.5 million. In 2016, the Company recorded a non-cash impairment charge of $7.6 million. See discussion in Note D in the Notes to the Consolidated Financial Statements.

Long-Lived Assets

The Company reviews long-lived assets for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. For property, plant and equipment and other long-lived assets, excluding indefinite-lived intangible assets, the Company performs undiscounted operating cash flow analyses to determine if an impairment exists. If an impairment is determined to exist, any related impairment loss is calculated based on fair value. Fair value is primarily determined using discounted cash flow analyses; however, other methods may be used to substantiate the discounted cash flow analyses, including third party valuations when necessary.

Warranty

The Company engages in extensive product quality programs and processes, including actively monitoring and evaluating the quality of its suppliers. However, its warranty obligation is affected by product failure rates, the extent of the market affected by the failure and the expense involved in satisfactorily addressing the situation. The warranty reserve is established based on our best estimate of the amounts necessary to settle future and existing claims on products sold as of the balance sheet date. When evaluating the adequacy of the reserve for warranty costs, management takes into consideration the term of the warranty coverage, historical claim rates and costs of repair, knowledge of the type and volume of new products and economic trends. While we believe the warranty reserve is adequate and that the judgment applied is appropriate, such amounts estimated to be due and payable in the future could differ materially from what actually transpires.

Pension and Other Postretirement Benefit Plans

The Company provides a wide range of benefits to employees and retired employees, including pensions and postretirement health care coverage. Plan assets and obligations are recorded annually based on the Company's measurement date utilizing various actuarial assumptions such as discount rates, expected return on plan assets, compensation increases, retirement and mortality tables, and health care cost trend rates as of that date. The approach used to determine the annual assumptions are as follows:

Discount Rate – based on the Willis Towers Watson BOND:Link model at June 30, 2018, as applied to the expected payouts from the pension plans. This yield curve is made up of Corporate Bonds rated AA or better.

Expected Return on Plan Assets – based on the expected long-term average rate of return on assets in the pension funds, which is reflective of the current and projected asset mix of the funds and considers historical returns earned on the funds.

Compensation Increase – reflect the long-term actual experience, the near-term outlook and assumed inflation.

Retirement and Mortality Rates – based upon the Society of Actuaries RP-2014 base tables for annuitants and non-annuitants, adjusted for generational mortality improvement based on the Society of Actuaries MP-2017 projection scale.

Health Care Cost Trend Rates – developed based upon historical cost data, near-term outlook and an assessment of likely long-term trends.

Measurements of net periodic benefit cost are based on the assumptions used for the previous year-end measurements of assets and obligations. The Company reviews its actuarial assumptions on an annual basis and makes modifications to the assumptions when appropriate. The effects of the modifications are recorded currently or amortized over future periods. Based on information provided by its independent actuaries and other relevant sources, the Company believes that the assumptions used are reasonable; however, changes in these assumptions could impact the Company's financial position, results of operations or cash flows.

Income Taxes

Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The Company maintains valuation allowances when it is more likely than not that all or a portion of a deferred tax asset will not be realized. In determining whether a valuation allowance is required, the Company takes into account such factors as prior earnings history, expected future earnings, carryback and carryforward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset.

Recently Issued Accounting Standards

See Note A, Significant Accounting Policies, to the consolidated financial statements for a discussion of recently issued accounting standards.

ITEM 7(A). QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

The Company is exposed to market risks from changes in interest rates, commodities and foreign currency exchange rates. To reduce such risks, the Company selectively uses financial instruments and other proactive management techniques. All hedging transactions are authorized and executed pursuant to clearly defined policies and procedures, which prohibit the use of financial instruments for trading or speculative purposes. Discussion of the Company's accounting policies and further disclosure relating to financial instruments is included in Note A to the consolidated financial statements.

Interest rate risk - The Company's earnings exposure related to adverse movements of interest rates is primarily derived from outstanding floating rate debt instruments that are indexed to a Eurodollar rate. In accordance with the Credit Agreement expiring June 30, 2023, the Company has the option of borrowing at a LIBOR Rate plus an additional "Add-On" based on total funded debt to EBITDA, which was at 2.25% as of June 30, 2018. Due to the relative stability of interest rates, the Company did not utilize any financial instruments at June 30, 2018, to manage interest rate risk exposure. A 10 percent increase or decrease in the applicable interest rate would result in a change in pretax interest expense of approximately $20,000.

Commodity price risk - The Company is exposed to fluctuations in market prices for such commodities as steel and aluminum. The Company does not utilize commodity price hedges to manage commodity price risk exposure. Direct material cost as a percent of total cost of goods sold was 56.0% for fiscal 2018.

Currency risk - The Company has exposure to foreign currency exchange fluctuations. Approximately 24% of the Company's revenues in the year ended June 30, 2018, were denominated in currencies other than the U.S. dollar. Of that total, approximately 54% was denominated in euros with the balance comprised of Japanese yen, Indian rupee, Swiss franc and the Australian and Singapore dollars. The Company does not hedge the translation exposure represented by the net assets of its foreign subsidiaries. Foreign currency translation adjustments are recorded as a component of shareholders' equity. Forward foreign exchange contracts are used to hedge the currency fluctuations on significant transactions denominated in foreign currencies.

Derivative financial instruments - The Company has written policies and procedures that place all financial instruments under the direction of the Company's corporate treasury department and restrict derivative transactions to those intended for hedging purposes. The use of financial instruments for trading purposes is prohibited. The Company uses financial instruments to manage the market risk from changes in foreign exchange rates.

The Company primarily enters into forward exchange contracts to reduce the earnings and cash flow impact of non-functional currency denominated receivables and payables. These contracts are highly effective in hedging the cash flows attributable to changes in currency exchange rates. Gains and losses resulting from these contracts offset the foreign exchange gains or losses on the underlying assets and liabilities being hedged. The maturities of the forward exchange contracts generally coincide with the settlement dates of the related transactions. Gains and losses on these contracts are recorded in Other Expense, Net in the Condensed Consolidated Statement of Operations as the changes in the fair value of the contracts are recognized and generally offset the gains and losses on the hedged items in the same period. The primary currency to which the Company was exposed in fiscal 2018 and 2017 was the euro. The Company had no outstanding forward exchange contracts at June 30, 2018. At June 30, 2017, one of the Company's foreign subsidiaries had three outstanding forward exchange contracts to purchase U.S. dollars in the notional value of $1,050,000 with a weighted average maturity of 53 days. The fair value of the Company's contract was a loss of $29,000 at June 30, 2017.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

See Consolidated Financial Statements and Financial Statement Schedule.
Sales and Earnings by Quarter – Unaudited (in thousands, except per share amounts)

2018	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Year
Net sales	$45,064	$56,546	$65,349	$73,774	$240,733
Gross profit	13,895	18,126	20,725	27,490	80,236
Restructuring expenses	1,218	831	452	897	3,398
Goodwill and other asset impairment charge	—	—	—	—	—
Net income (loss)	3,405	(4,050)	4,336	5,956	9,647
Net income (loss) attributable to Twin Disc	3,392	(4,113)	4,308	5,941	9,528
Basic income (loss) per share attributable to Twin Disc common shareholders	0.29	(0.36)	0.37	0.51	0.82
Diluted income (loss) per share attributable to Twin Disc common shareholders	0.29	(0.36)	0.37	0.51	0.82
Dividends per share	—	—	—	—	—

2017	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Year
Net sales	$35,835	$33,672	$45,084	$53,591	$168,182
Gross profit	9,173	8,949	13,294	16,816	48,232
Restructuring expenses	258	816	293	424	1,791
Goodwill impairment charge	—	—	2,637	9	2,646
Net (loss) income	(2,671)	(2,892)	(1,728)	1,176	(6,115)
Net (loss) income attributable to Twin Disc	(2,696)	(2,912)	(1,849)	1,163	(6,294)
Basic (loss) income per share attributable to Twin Disc common shareholders	(0.24)	(0.26)	(0.16)	0.10	(0.56)
Diluted (loss) income per share attributable to Twin Disc common shareholders	(0.24)	(0.26)	(0.16)	0.10	(0.56)
Dividends per share	—	—	—	—	—

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

None.

ITEM 9(A). CONTROLS AND PROCEDURES

Conclusion Regarding Disclosure Controls and Procedures

As required by Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as of the end of the period covered by this report and under the supervision and with the participation of management, including the Chief Executive Officer and the Chief Financial Officer, the Company has evaluated the effectiveness of the design and operation of its disclosure controls and procedures. Based on such evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that such disclosure controls and procedures are effective to provide reasonable assurance that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms, and to provide reasonable assurance that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding disclosure.

Management's Report on Internal Control Over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The 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 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 financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of the 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 and procedures included in such controls may deteriorate.

The Company conducted an evaluation of the effectiveness of our internal control over financial reporting based upon the framework (2013 edition) in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based upon such evaluation, our management concluded that our internal control over financial reporting was effective as of June 30, 2018.

RSM US LLP, an independent registered public accounting firm, has audited the Company's internal control over financial reporting as of June 30, 2018, as stated in their report which appears herein.

Changes in Internal Controls Over Financial Reporting

During the fourth quarter of fiscal 2018, there have not been any changes in the Company's internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

ITEM 9(B). OTHER INFORMATION

Not applicable.

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

For information with respect to the executive officers of the Registrant, see "Executive Officers of the Registrant" at the end of Part I of this report.

For information with respect to the Directors of the Registrant, see "Election of Directors" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference.

For information with respect to compliance with Section 16(a) of the Securities Exchange Act of 1934, see "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference.

For information with respect to the Company's Code of Ethics, see "Guidelines for Business Conduct and Ethics" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference. The Company's Code of Ethics, entitled, "Guidelines for Business Conduct and Ethics," is included on the Company's website, www.twindisc.com. If the Company makes any substantive amendment to the Code of Ethics, or grants a waiver from a provision of the Code of Ethics for its Chief Executive Officer, Chief Financial Officer or Chief Accounting Officer (or any person performing similar functions), it intends to disclose the nature of such amendment on its website within four business days of the amendment or waiver in lieu of filing a Form 8-K with the SEC.

For information with respect to procedures by which shareholders may recommend nominees to the Company's Board of Directors, see "Director Committee Functions: Nominating and Governance Committee" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference. There were no changes to these procedures since the Company's last disclosure relating to these procedures.

For information with respect to the Audit Committee Financial Expert, see "Director Committee Functions: Audit Committee" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference.

For information with respect to the Audit Committee Disclosure, see "Director Committee Functions: Audit Committee" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference.

For information with respect to the Audit Committee Membership, see "Director Committee Functions: Committee Membership" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information set forth under the captions "Executive Compensation," "Director Compensation," "Compensation Committee Interlocks and Insider Participation," and "Compensation and Executive Development Committee Report," in the Proxy Statement for the Annual Meeting of Shareholders to be held on October 25, 2018, is incorporated into this report by reference. Discussion in the Proxy Statement under the caption "Compensation and Executive Development Committee Report" is incorporated by reference but shall not be deemed "soliciting material" or to be "filed" as part of this report.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

For information regarding security ownership of certain beneficial owners and management, see the Proxy Statement for the Annual Meeting of Shareholders to be held on October 25, 2018, under the captions "Principal Shareholders" and "Directors and Executive Officers" and incorporated into this report by reference.

For information regarding securities authorized for issuance under equity compensation plans of the Company, see "Equity Compensation Plan Information" in the Proxy Statement for the Annual Meeting of Shareholders to be held on October 25, 2018, which is incorporated into this report by reference.

There are no arrangements known to the Registrant, the operation of which may at a subsequent date result in a change in control of the Registrant.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, DIRECTOR INDEPENDENCE

For information with respect to transactions with related persons and policies for the review, approval or ratification of such transactions, see "Corporate Governance – Review, Approval or Ratification of Transactions with Related Persons" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference.

For information with respect to director independence, see "Corporate Governance – Board Independence" in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, which is incorporated into this report by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The Company incorporates by reference the information contained in the Proxy Statement for the Annual Meeting of Shareholders to be held October 25, 2018, under the headings "Fees to Independent Registered Public Accounting Firm" and "Pre-approval Policies and Procedures."

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a)(1) Consolidated Financial Statements

See Index to Consolidated Financial Statements and Financial Statement Schedule, the Report of Independent Registered Public Accounting Firm and the Consolidated Financial Statements, all of which are incorporated by reference.

(a)(2) Consolidated Financial Statement Schedule

See Index to Consolidated Financial Statements and Financial Statement Schedule, and the Consolidated Financial Statement Schedule, all of which are incorporated by reference.

(a)(3) Exhibits. See Exhibit Index included as the last page of this form, which is incorporated by reference.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE

Index To Consolidated Financial Statements

	Page
Report of Independent Registered Public Accounting Firm	41–43
Consolidated Balance Sheets as of June 30, 2018 and 2017	44
Consolidated Statements of Operations and Comprehensive Income for the years ended June 30, 2018, 2017 and 2016	45
Consolidated Statements of Cash Flows for the years ended June 30, 2018, 2017 and 2016	46
Consolidated Statements of Changes in Equity for the years ended June 30, 2018, 2017 and 2016	47
Notes to Consolidated Financial Statements	48–71

Index To Financial Statement Schedule

Schedule II – Valuation and Qualifying Accounts	71

Schedules, other than those listed, are omitted for the reason that they are inapplicable, are not required, or the information required is shown in the financial statements or the related notes.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Twin Disc, Incorporated:

Opinion on the Internal Control Over Financial Reporting

We have audited Twin Disc, Incorporated's (the Company) internal control over financial reporting as of June 30, 2018, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of June 30, 2018, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the financial statements of the Company and our report dated August 27, 2018 expressed an unqualified opinion.

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 in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with 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, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included 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/ RSM US LLP

Milwaukee, Wisconsin
August 27, 2018

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Twin Disc, Incorporated

Opinion on the Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheet of Twin Disc, Incorporated (the Company) as of June 30, 2018, the related consolidated statements of operations and comprehensive income, changes in equity and cash flows for the year then ended, and the related notes to the consolidated financial statements and schedules (collectively, the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of June 30, 2018, and the results of its operations and its cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of June 30, 2018, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013, and our report dated August 27, 2018 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our 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 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 the financial statements are free of material misstatement, whether due to error or fraud. Our audit 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 audit 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 audit provides a reasonable basis for our opinion.

/s/ RSM US LLP

We have served as the Company's auditor since 2018.

Milwaukee, Wisconsin
August 27, 2018

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Twin Disc, Incorporated:

In our opinion, the consolidated financial statements listed in the accompanying index present fairly, in all material respects, the financial position of Twin Disc, Incorporated and its subsidiaries as of June 30, 2017 and the results of their operations and their cash flows for each of the two years in the period ended June 30, 2017 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule for each of the two years in the period ended June 30, 2017 presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits. We conducted our audits of these financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

Milwaukee, Wisconsin
August 27, 2017

TWIN DISC, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

June 30, 2018 and 2017

(In thousands, except share amounts)

ASSETS	2018	2017
Current assets:		
Cash	$ 15,171	$ 16,367
Accounts receivable, net	45,422	31,392
Inventories	84,001	66,193
Prepaid expenses	8,423	8,295
Other	6,252	7,187
Total current assets	$159,269	$129,434
Property, plant and equipment, net	48,940	48,212
Goodwill, net	2,692	2,585
Deferred income taxes	18,056	24,198
Intangible assets, net	1,906	2,009
Other assets	3,850	4,460
Total assets	$234,713	$210,898
LIABILITIES and EQUITY		
Current liabilities:		
Accounts payable	$ 29,368	$ 21,301
Accrued liabilities	32,976	23,222
Total current liabilities	62,344	44,523
Long-term debt	4,824	6,323
Accrued retirement benefits	21,068	33,706
Deferred income taxes	1,203	1,011
Other long-term liabilities	1,658	1,768
Total liabilities	91,097	87,331
Commitments and contingencies (Note O)		
Twin Disc shareholders' equity:		
Preferred shares authorized: 200,000; issued: none; no par value	—	—
Common shares authorized: 30,000,000; issued: 13,099,468; no par value	11,570	10,429
Retained earnings	178,896	169,368
Accumulated other comprehensive loss	(23,792)	(32,671)
	166,674	147,126
Less treasury stock, at cost (1,545,783 and 1,580,335 shares, respectively)	23,677	24,205
Total Twin Disc shareholders' equity	142,997	122,921
Noncontrolling interest	619	646
Total equity	143,616	123,567
Total liabilities and equity	$234,713	$210,898

The notes to consolidated financial statements are an integral part of these statements.

TWIN DISC, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME

For the years ended June 30, 2018, 2017 and 2016

(In thousands, except per share amounts)

	2018	2017	2016
Net sales	$240,733	$168,182	$166,282
Cost of goods sold	160,497	119,950	125,687
Gross profit	80,236	48,232	40,595
Marketing, engineering and administrative expenses	61,909	52,773	57,113
Restructuring expenses	3,398	1,791	921
Goodwill and other asset impairment charge	—	2,646	7,602
Other operating expense (income)	—	—	(445)
Income (loss) from operations	14,929	8,978	(24,596)
Other income (expense):			
Interest income	55	72	147
Interest expense	(282)	(303)	(426)
Other income (expense), net	(282)	(320)	(420)
	(509)	(551)	(699)
Income (loss) before income taxes and noncontrolling interest	14,420	(9,529)	(25,295)
Income tax expense (benefit)	4,773	(3,414)	(12,282)
Net income (loss)	9,647	(6,115)	(13,013)
Less: Net earnings attributable to noncontrolling interest, net of tax	(119)	(179)	(91)
Net income (loss) attributable to Twin Disc	$ 9,528	$ (6,294)	$ (13,104)
Income (loss) per share data:			
Basic income (loss) per share attributable to Twin Disc common shareholders	$ 0.82	$ (0.56)	$ (1.17)
Diluted income (loss) per share attributable to Twin Disc common shareholders	$ 0.82	$ (0.56)	$ (1.17)
Weighted average shares outstanding data:			
Basic shares outstanding	11,295	11,239	11,203
Dilutive stock awards	100	—	—
Diluted shares outstanding	11,395	11,239	11,203
Comprehensive income (loss):			
Net income (loss)	$ 9,647	$ (6,115)	$ (13,013)
Foreign currency translation adjustment	981	985	(1,557)
Benefit plan adjustments, net of income taxes of $3,207, $6,149 and ($3,340), respectively	7,924	10,500	(7,080)
Comprehensive income (loss)	18,552	5,370	(21,650)
Less: Comprehensive income attributable to noncontrolling interest	(145)	(193)	(114)
Comprehensive income (loss) attributable to Twin Disc	$ 18,407	$ 5,177	$ (21,764)

The notes to consolidated financial statements are an integral part of these statements.

TWIN DISC, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

for the years ended June 30, 2018, 2017 and 2016 (in thousands)

	2018	2017	2016
Cash flows from operating activities:			
Net income (loss)	$ 9,647	$ (6,115)	$(13,013)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	6,464	7,017	8,847
Stock compensation expense	2,062	1,615	1,295
Restructuring of operations	238	92	354
Provision for deferred income taxes	3,004	(4,245)	(12,203)
Goodwill and other asset impairment charge	—	2,646	7,602
Other, net	(63)	7	74
Changes in operating assets and liabilities:			
Trade accounts receivable	(13,774)	(5,885)	18,422
Inventories	(17,460)	624	10,060
Other assets	1,537	(682)	938
Accounts payable	6,844	6,034	(6,285)
Accrued liabilities	10,096	983	(12,580)
Accrued/prepaid retirement benefits	(2,084)	1,087	(120)
Net cash provided by operating activities	6,511	3,178	3,391
Cash flows from investing activities:			
Capital expenditures	(6,328)	(3,133)	(4,214)
Proceeds from sale of plant assets	152	217	124
Proceeds from sale of business (see Note P)	—	—	3,500
Proceeds from life insurance policy	—	—	2,002
Other, net	(128)	(126)	(270)
Net cash (used) provided by investing activities	(6,304)	(3,042)	1,142
Cash flows from financing activities:			
Borrowings under revolving loan agreement	80,642	53,920	89,473
Repayments under revolving loan agreement	(82,143)	(56,113)	(91,203)
Payments of withholding taxes on stock compensation	(422)	(140)	(190)
Dividends paid to noncontrolling interest	(172)	(109)	(192)
Proceeds from exercise of stock options	29	—	12
Excess tax benefits (shortfall) from stock compensation	—	—	(349)
Dividends paid to shareholders	—	—	(2,041)
Payments of senior notes	—	—	(3,571)
Net cash used by financing activities	(2,066)	(2,442)	(8,061)
Effect of exchange rate changes on cash	663	400	(1,135)
Net change in cash	(1,196)	(1,906)	(4,633)
Cash:			
Beginning of year	16,367	18,273	22,936
End of year	$15,171	$16,367	$ 18,273
Supplemental cash flow information:			
Cash paid (received) during the year for:			
Interest	$ 304	$ 300	$ 474
Income taxes	(7)	27	1,758

The notes to consolidated financial statements are an integral part of these statements.

TWIN DISC, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

for the years ended June 30, 2018, 2017 and 2016 (in thousands)

	Common Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Non-controlling Interest	Total Equity
Balance at June 30, 2015	$12,259	$190,807	$(35,481)	$(28,057)	$639	$140,167
Net (loss) income	—	(13,104)	—	—	91	(13,013)
Translation adjustments	—	—	(1,582)	—	25	(1,557)
Benefit plan adjustments, net of tax	—	—	(7,080)	—	—	(7,080)
Cash dividends	—	(2,041)	—	—	(192)	(2,233)
Compensation expense and windfall tax benefits	946	—	—	—	—	946
Shares (acquired) issued, net	(1,444)	—	—	1,267	—	(177)
Balance at June 30, 2016	11,761	175,662	(44,143)	(26,790)	563	117,053
Net (loss) income	—	(6,294)	—	—	179	(6,115)
Translation adjustments	—	—	972	—	13	985
Benefit plan adjustments, net of tax	—	—	10,500	—	—	10,500
Cash dividends	—	—	—	—	(109)	(109)
Compensation expense and windfall tax benefits	1,393	—	—	—	—	1,393
Shares (acquired) issued, net	(2,725)	—	—	2,585	—	(140)
Balance at June 30, 2017	10,429	169,368	(32,671)	(24,205)	646	123,567
Net income	—	9,528	—	—	119	9,647
Translation adjustments	—	—	955	—	26	981
Benefit plan adjustments, net of tax	—	—	7,924	—	—	7,924
Cash dividends	—	—	—	—	(172)	(172)
Compensation expense	2,062	—	—	—	—	2,062
Shares (acquired) issued, net	(921)	—	—	528	—	(393)
Balance at June 30, 2018	$11,570	$178,896	$(23,792)	$(23,677)	$619	$143,616

The notes to consolidated financial statements are an integral part of these statements.

TWIN DISC, INCORPORATED AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(amounts in thousands, except share amounts and per share data)

A. SIGNIFICANT ACCOUNTING POLICIES

The following is a summary of the significant accounting policies followed in the preparation of these financial statements:

Consolidation Principles – The consolidated financial statements include the accounts of Twin Disc, Incorporated and its wholly and majority-owned domestic and foreign subsidiaries (the "Company"). Certain foreign subsidiaries are included based on fiscal years ending May 31, to facilitate prompt reporting of consolidated accounts. The Company also has a controlling interest in a Japanese joint venture, which is consolidated based upon a fiscal year ending March 31. All significant intercompany transactions have been eliminated.

Management Estimates – The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual amounts could differ from those estimates.

Translation of Foreign Currencies – The financial statements of the Company's non-U.S. subsidiaries are translated using the current exchange rate for assets and liabilities and the weighted-average exchange rate for the year for revenues and expenses. The resulting translation adjustments are recorded as a component of accumulated other comprehensive loss, which is included in equity. Gains and losses from foreign currency transactions are included in earnings. Included in other income (expense) are foreign currency transaction losses of ($198), ($318) and ($320) in fiscal 2018, 2017 and 2016, respectively.

Cash – The Company considers all highly liquid investments with original maturities of three months or less to be cash equivalent. Under the Company's cash management system, cash balances at certain banks are funded when checks are presented for payment. To the extent that checks issued, but not yet presented for payment, exceed the balance on hand at the specific bank against which they were written, the amount of those un-presented checks is included in accounts payable.

Accounts Receivable – These represent trade accounts receivable and are stated net of an allowance for doubtful accounts of $1,478 and $1,519 at June 30, 2018 and 2017, respectively. The Company records an allowance for doubtful accounts provision for certain customers where a risk of default has been specifically identified as well as provisions determined on a general basis when it is believed that some default is probable and estimable. The assessment of likelihood of customer default is based on a variety of factors, including the length of time the receivables are past due, the historical collection experience and existing economic conditions. Various factors may adversely impact our customer's ability to access sufficient liquidity and capital to fund their operations and render the Company's estimation of customer defaults inherently uncertain. While the Company believes current allowances for doubtful accounts are adequate, it is possible that these factors may cause higher levels of customer defaults and bad debt expense in future periods.

Fair Value of Financial Instruments – The carrying amount reported in the consolidated balance sheets for cash, trade accounts receivable and accounts payable approximate fair value because of the immediate short-term maturity of these financial instruments. If measured at fair value, cash would be classified as Level 1 and all other items listed above would be classified as Level 2 in the fair value hierarchy, as described in Note M. The Company's borrowings under the revolving loan agreement, which is classified as long-term debt and consists of loans that are routinely borrowed and repaid throughout the year, approximate fair value at June 30, 2018. If measured at fair value in the financial statements, long-term debt (including any current portion) would be classified as Level 2 in the fair value hierarchy, as described in Note M.

Derivative Financial Instruments – The Company has written policies and procedures that place all financial instruments under the direction of the Company's corporate treasury department and restrict all derivative transactions to those intended for hedging purposes. The use of financial instruments for trading purposes is prohibited. The Company uses financial instruments to manage the market risk from changes in foreign exchange rates.

Periodically, the Company enters into forward exchange contracts to reduce the earnings and cash flow impact of non-functional currency denominated receivables and payables. These contracts are highly effective in hedging the cash flows attributable to changes in currency exchange rates. Gains and losses resulting from these contracts offset the foreign exchange gains or losses on the underlying assets and liabilities being hedged. The maturities of the forward exchange contracts generally coincide with the settlement dates of the related transactions. Gains and losses on these contracts are recorded in other income (expense) as the changes in the fair value of the contracts are recognized and generally offset the gains and losses on the hedged items in the same period. The primary currency to which the Company was exposed in fiscal 2018 and 2017 was the euro. The Company had no outstanding forward exchange contracts at June 30, 2018. At June 30, 2017, one of the Company's foreign subsidiaries had three outstanding forward exchange contracts to purchase U.S. dollars in the notional value of $1,050 with a weighted average maturity of 53 days. The fair value of the Company's contract was a loss of $29 at June 30, 2017.

Inventories – Inventories are valued at the lower of cost or net realizable value. Cost has been determined by the last-in, first-out (LIFO) method for the majority of inventories located in the United States, and by the first-in, first-out (FIFO) method for all other inventories. Management specifically identifies obsolete products and analyzes historical usage, forecasted production based on future orders, demand forecasts, and economic trends, among others, when evaluating the adequacy of the reserve for excess and obsolete inventory.

Property, Plant and Equipment and Depreciation – Assets are stated at cost. Expenditures for maintenance, repairs and minor renewals are charged against earnings as incurred. Expenditures for major renewals and betterments are capitalized and depreciated. Depreciation is provided on the straight-line method over the estimated useful lives of the assets. The lives assigned to buildings and related improvements range from 10 to 40 years, and the lives assigned to machinery and equipment range from 5 to 15 years. Upon disposal of property, plant and equipment, the cost of the asset and the related accumulated depreciation are removed from the accounts and the resulting gain or loss is reflected in earnings. Fully depreciated assets are not removed from the accounts until physically disposed.

Impairment of Long-lived Assets – The Company reviews long-lived assets for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. For property, plant and equipment and other long-lived assets, excluding indefinite-lived intangible assets, the Company performs undiscounted operating cash flow analyses to determine if an impairment exists. If an impairment is determined to exist, any related impairment loss is calculated based on fair value. Fair value is primarily determined using discounted cash flow analyses; however, other methods may be used to determine the fair value, including third party valuations when necessary.

Goodwill and Other Intangibles – Goodwill and other indefinite-lived intangible assets, primarily tradenames, are tested for impairment at least annually on the last day of the Company's fiscal year and more frequently if an event occurs which indicates the asset may be impaired. If applicable, goodwill and other indefinite-lived intangible assets not subject to amortization have been assigned to reporting units for purposes of impairment testing based upon the relative fair value of the asset to each reporting unit.

A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include, among others: a significant decline in expected future cash flows; a sustained, significant decline in the Company's stock price and market capitalization; a significant adverse change in legal factors or in the business climate; unanticipated competition; the testing for recoverability of a significant asset group within a reporting unit; and slower growth rates. Any adverse change in these factors could have a significant impact on the recoverability of these assets and could have a material impact on the Company's consolidated financial statements.

The Company early-adopted the new goodwill guidance, ASU 2017-04, during the third quarter of fiscal 2017. Under the new guidance, the goodwill impairment process has been simplified to a one-step approach. The fair value of a reporting unit, as defined, is compared to the carrying value of the reporting unit, including goodwill. The fair value is primarily determined using discounted cash flow analyses which is driven by projected growth rates, and which applies an appropriate market-participant discount rate; the fair value determined is also compared to the value obtained using a market approach from guideline public company multiples. If the carrying amount exceeds the fair value, that difference is recognized as an impairment loss.

The Company conducted interim qualitative assessments throughout the year, and its annual assessment for goodwill impairment as of June 30, 2018 and 2017, using updated inputs, including appropriate risk-based, country and company specific weighted average discount rates for the Company's reporting units. As further described in Note D, these assessments resulted in the Company recognizing a goodwill impairment charge in fiscal 2017.

The fair value of the Company's other intangible assets with indefinite lives, primarily tradenames, is estimated using the relief-from-royalty method, which requires assumptions related to projected revenues; assumed royalty rates that could be payable if the Company did not own the asset; and a discount rate. The Company completed the impairment testing of indefinite-lived intangibles as of June 30, 2018, and concluded there were no impairments.

Changes in circumstances, existing at the measurement date or at other times in the future, or in the numerous estimates associated with management's judgments, assumptions and estimates made in assessing the fair value of goodwill and other indefinite-lived intangibles, could result in an impairment charge in the future. The Company will continue to monitor all significant estimates and impairment indicators, and will perform interim impairment reviews as necessary.

Any cost incurred to extend or renew the term of an indefinite-lived intangible asset are expensed as incurred.

Income Taxes – The Company recognizes deferred tax liabilities and assets for the expected future income tax consequences of events that have been recognized in the Company's financial statements. Under this method, deferred tax liabilities and assets are determined based on the temporary differences between the financial statement carrying amounts and the tax bases of assets and liabilities using enacted tax rates in effect in the years in which temporary differences are expected to reverse. Valuation allowances are provided for deferred tax assets where it is considered more likely than not that the Company will not realize the benefit of such assets. The Company evaluates its uncertain tax positions as new information becomes available. Tax benefits are recognized to the extent a position is more likely than not to be sustained upon examination by the taxing authority.

Revenue Recognition – Revenue is recognized by the Company when all of the following criteria are met: persuasive evidence of an arrangement exists; delivery has occurred and ownership has transferred to the customer; the price to the customer is fixed or determinable; and collectability is reasonably assured. Revenue is recognized at the time product is shipped to the customer, except for certain domestic shipments to overseas customers where revenue is recognized upon receipt by the customer. A significant portion of our consolidated net sales is transacted through a third party distribution network. Sales to third party distributors are subject to the revenue recognition criteria described above. Goods sold to third party distributors are subject to an annual return policy, for which a provision is made at the time of shipment based upon historical experience.

As more fully discussed in Recently Issued Accounting Standards, the Company expects to adopt ASU 2014-09 in fiscal 2019. Under the new guidance, the Company's timing of recognizing revenue will change; however, the impact has been determined to be insignificant.

Shipping and Handling Fees and Costs – The Company records revenue from shipping and handling costs in net sales. The cost associated with shipping and handling of products is reflected in cost of goods sold.

Recently Issued Accounting Standards

In June 2018, the Financial Accounting Standards Board ("FASB") issued guidance (ASU 2018-07) intended to simplify the accounting for share-based payments granted to nonemployees. Under the amendments in this guidance, payments to nonemployees would be aligned with the requirements for share-based payments granted to employees. The amendments in this guidance are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018, (the Company's fiscal 2020), including interim periods within that fiscal year. The Company is currently evaluating the potential impact of this guidance on the Company's financial statements and disclosures.

In February 2018, the FASB issued guidance (ASU 2018-02) intended to eliminate the stranded tax effects resulting from the Tax Cuts and Jobs Act by allowing a reclassification from accumulated other comprehensive income to retained earnings. The amendments in this guidance are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018, (the Company's fiscal 2020), with early adoption permitted. The Company has not decided when it will adopt this guidance; its adoption will have no impact to total shareholders' equity.

In March 2017, the FASB issued guidance (ASU 2017-07) intended to improve the presentation of net periodic pension cost and net periodic postretirement cost. This guidance requires that an employer report the service costs component in the same line item as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the statement of operations separately from the service cost component and outside the subtotal of income from operations. The amendments in this guidance are effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2017, (the Company's fiscal 2019), with early adoption permitted. The Company is currently evaluating the potential impact of this guidance on the Company's financial statements and disclosures.

In October 2016, the FASB issued updated guidance (ASU 2016-16) that changes the recognition of income tax consequences of an intra-entity transfer of an asset other than inventory. The amendments in this guidance are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, (the Company's fiscal 2019), with early adoption permitted. The Company is currently evaluating the potential impact of this guidance on the Company's financial statements and disclosures.

In August 2016, the FASB issued updated guidance (ASU 2016-15) that addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice. The amendments in this guidance are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, (the Company's fiscal 2019), with early adoption permitted. The Company is currently evaluating the potential impact of this guidance on the Company's financial statements and disclosures.

In March 2016, the FASB issued updated guidance (ASU 2016-09) intended to simplify several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The Company adopted this standard in the first quarter of fiscal year 2018. As a result of the adoption, excess tax benefits or deficiencies associated with stock-based compensation award activity are recognized in income tax expense in the consolidated statements of operations. In addition, excess tax benefits associated with award activity is reported as cash flows from operating activities along with all other income tax cash flows. The Company has elected to apply this classification change on a prospective basis. The adoption of this guidance did not have a material impact on the Company's financial statements.

In February 2016, the FASB issued guidance (ASU 2016-02) which replaces the existing guidance for leases. The new standard establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. The guidance is effective for fiscal years beginning after December 15, 2018, (the Company's fiscal 2020), including interim periods within those fiscal years and requires retrospective application.

In preparation for the adoption of this guidance, the Company gathered all active lease contracts from all its locations to assess whether or not they meet the definition of a lease under the new guidance, specifically, whether there is an identified asset in the contract, and whether or not control thereof lies with the Company. The Company assessed the practical expedients that are allowed under the guidance, including the exclusion of lease contracts with terms of twelve months or less. It assessed each contract for the appropriate lease payment components, discount rate, lease terms (dependent on renewal options) and compiled a calculation of the right-of-use assets and operating lease liability amounts that would be recognized on the Company's balance sheet upon adoption of the guidance.

During the fiscal year, the Company concluded its assessment of the impact of the new guidance on its accounting practices, including the operational process changes. It plans to early-adopt the guidance, using the modified retrospective approach, to coincide with its adoption of the new revenue recognition guidance, which is the first quarter of fiscal 2019. At June 30, 2018, the Company would have recognized a right-of-use asset and an operating lease liability of $6,527 as a result of the new guidance.

In July 2015, the FASB issued guidance (ASU 2015-11) intended to simplify the measurement of inventory and to closely align with International Financial Reporting Standards. Current guidance requires inventories to be measured at the lower of cost or market. Under this new guidance, inventories other than those measured under last in first out ("LIFO") are to be measured at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. The Company adopted this guidance, prospectively, in the first fiscal quarter of 2018. The adoption of this guidance did not have an impact on the Company's financial statements.

In May 2014, the FASB issued updated guidance (ASU 2014-09) on revenue from contracts with customers. This revenue recognition guidance supersedes existing guidance, including industry-specific guidance. The core principle is that an entity should recognize revenue to depict the transfer of control over 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 guidance identifies steps to apply in achieving this principle. This updated guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, (the Company's first quarter of fiscal 2019).

During the fiscal year, the Company concluded its assessment of the impact of the new guidance on its accounting practices. It determined that deferral of revenue is appropriate for certain agreements where the performance of services after product delivery is required. Such services primarily pertain to technical commissioning services by its distribution entities in its marine business, whereby the Company's technicians calibrate the controls and transmission to ensure proper performance for the customer's specific application. This service helps identify issues with the ship's design or performance that need to be remediated by the ship builder or other component suppliers prior to the ship being officially accepted into service by the ship buyer. The cumulative effect adjustment of adopting the new standard is not significant to the Company's results of operations and financial condition.

The guidance permits two methods of adoption: full retrospective in which the standard is applied to all of the periods presented, or the modified retrospective approach in which the cumulative effect of initially applying the standard will be recognized as an adjustment to the opening balance of retained earnings. The Company plans to adopt the new standard using the modified retrospective approach and will apply the cumulative effect to its retained earnings balance as of July 1, 2018.

B. INVENTORIES

The major classes of inventories at June 30 were as follows:

	2018	2017
Finished parts	$49,332	$45,829
Work-in-process	13,183	8,358
Raw materials	21,486	12,006
	$84,001	$66,193

Inventories stated on a LIFO basis represent approximately 48% and 36% of total inventories at June 30, 2018 and 2017, respectively. The approximate current cost of the LIFO inventories exceeded the LIFO cost by $24,630 and $26,422 at June 30, 2018 and 2017, respectively. The Company had reserves for inventory obsolescence of $8,427 and $9,068 at June 30, 2018 and 2017, respectively.

C. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment at June 30 were as follows:

	2018	2017
Land	$ 6,525	$ 6,556
Buildings	46,473	46,479
Machinery and equipment	137,930	134,039
	190,928	187,074
Less: accumulated depreciation	(141,988)	(138,862)
	$48,940	$48,212

Depreciation expense for the years ended June 30, 2018, 2017 and 2016, was $6,315, $6,849 and $8,682, respectively.

D. GOODWILL AND OTHER INTANGIBLES

Goodwill

The Company reviews goodwill for impairment on a reporting unit basis annually as of the end of the fiscal year, and whenever events or changes in circumstances ("triggering events") indicate that the carrying value of goodwill may not be recoverable.

The fair value of reporting units is primarily driven by projected growth rates and operating results under the income approach using a discounted cash flow model, which applies an appropriate market-participant discount rate, and consideration of other market approach data from guideline public companies. If declining actual operating results or future operating results become indicative that the fair value of the Company's reporting units has declined below their carrying values, an interim goodwill impairment test may need to be performed and may result in a non-cash goodwill impairment charge. If the Company's market capitalization falls below the Company's carrying value for a sustained period of time or if such a decline becomes indicative that the fair value of the Company's reporting units has declined to below their carrying values, an interim goodwill impairment test may need to be performed and may result in a non-cash goodwill impairment charge.

During the 2018 fiscal year, the Company determined that there were no triggering events to warrant an interim goodwill impairment test. The Company conducted its annual assessment for goodwill impairment as of June 30, 2018, its measurement date, using current assumptions, including updated forecasted cash flows and a reporting unit specific discount rate of 14.0%, and concluded that goodwill is not impaired. As of June 30, 2018, the balance of goodwill of $2,692 is carried in the European Industrial reporting unit. The fair value of the European Industrial reporting unit exceeded its carrying value by 87% and therefore no impairment charge was required for this reporting unit.

Prior to the current fiscal year, the Company recorded significant impairment charges in fiscal 2017 and 2016, primarily due to sustained unfavorable operating results during those years. In fiscal 2016, the impairment charge of $7,602 pertained to a 100% impairment of the Company's European Propulsion reporting unit, and a partial impairment of its U.S. Industrial reporting unit. In fiscal 2017, due to the lack of market recovery in that market, the Company recorded an additional impairment charge to fully impair the balance of $2,550 relating to its U.S. Industrial reporting unit. The impairment charges were recorded after a determination that the fair value of those respective reporting units, as determined using respective discounted cash flow analysis and market participant discount rates, were less than their carrying values. The impairment charges were of a non-cash nature; they did not impact liquidity, result in any future cash expenditures, affect the ongoing or financial performance of the Company, impact compliance with its lending arrangements, or reduce borrowing capacity.

The changes in the carrying amount of goodwill are summarized as follows:

	Net Book Value Rollforward			Net Book Value By Reporting Unit		
	Gross Carrying Amount	Accumulated Impairment	Net Book Value	U.S. Industrial	European Industrial	European Propulsion
Balance at June 30, 2016	$16,392	$(11,272)	$5,120	$2,550	$2,570	$ —
Impairment	—	(2,550)	(2,550)	(2,550)	—	—
Translation adjustment	15	—	15	—	15	—
Balance at June 30, 2017	16,407	(13,822)	2,585	—	2,585	—
Translation adjustment	107	—	107	—	107	—
Balance at June 30, 2018	$16,514	$(13,822)	$2,692	$ —	$2,692	$ —

Other Intangibles

At June 30, the following acquired intangible assets have definite useful lives and are subject to amortization:

	Net Book Value Rollforward			Net Book Value By Asset Type		
	Gross Carrying Amount	Accumulated Amortization/ Impairment	Net Book Value	Licensing Agreements	Trade Name	Other
Balance at June 30, 2016	$13,426	$(11,463)	$1,963	$450	$1,393	$120
Amortization	—	(168)	(168)	(60)	(80)	(28)
Translation adjustment	10	(1)	9	—	6	3
Balance at June 30, 2017	13,436	(11,632)	1,804	390	1,319	95
Addition	19	—	19	—	—	19
Amortization	—	(149)	(149)	(60)	(84)	(5)
Translation adjustment	30	—	30	—	53	(23)
Balance at June 30, 2018	$13,485	$(11,781)	$1,704	$ 330	$1,288	$ 86

Other intangibles consist of certain amortizable acquisition costs, proprietary technology, computer software and certain customer relationships.

The weighted average remaining useful life of the intangible assets included in the table above is approximately 13 years.

Intangible amortization expense for the years ended June 30, 2018, 2017 and 2016, was $149, $168 and $165, respectively. Estimated intangible amortization expense for each of the next five fiscal years is as follows:

Fiscal Year	
2019	$174
2020	174
2021	169
2022	149
2023	149
Thereafter	889

The gross carrying amount of the Company's intangible assets that have indefinite lives and are not subject to amortization as of June 30, 2018 and 2017, are $202 and $205, respectively. These assets are comprised of acquired tradenames.

E. ACCRUED LIABILITIES

Accrued liabilities at June 30 were as follows:

	2018	2017
Salaries and wages	$10,311	$ 6,714
Customer advances/deferred revenue	5,426	2,423
Warranty	3,952	1,708
Accrued Professional Fees	3,501	1,495
Retirement benefits	2,516	3,027
Other	7,270	7,855
	$32,976	$23,222

F. WARRANTY

The Company warrants all assembled products, parts (except component products or parts on which written warranties are issued by the respective manufacturers thereof and are furnished to the original customer, as to which the Company makes no warranty and assumes no liability) and service against defective materials or workmanship. Such warranty generally extends from periods ranging from 12 months to 24 months. The Company engages in extensive product quality programs and processes, including actively monitoring and evaluating the quality of its suppliers. However, its warranty obligation is affected by product failure rates, the number of units affected by the failure and the expense involved in satisfactorily addressing the situation. The warranty reserve is established based on our best estimate of the amounts necessary to settle future and existing claims on products sold as of the balance sheet date. When evaluating the adequacy of the reserve for warranty costs, management takes into consideration the term of the warranty coverage, historical claim rates and costs of repair, knowledge of the type and volume of new products and economic trends. While we believe the warranty reserve is adequate and that the judgment applied is appropriate, such amounts estimated to be due and payable in the future could differ materially from what actually transpires.

The following is a listing of the activity in the warranty reserve during the years ended June 30:

	2018	2017
Reserve balance, July 1	$2,062	$3,607
Current period expense	4,998	615
Payments or credits to customers	(2,671)	(2,179)
Translation adjustment	18	19
Reserve balance, June 30	$4,407	$2,062

The current portion of the warranty accrual ($3,952 and $1,708 for fiscal 2018 and 2017, respectively) is reflected in accrued liabilities, while the long-term portion ($455 and $354 for fiscal 2018 and 2017, respectively) is included in other long-term liabilities on the Consolidated Balance Sheets.

G. DEBT

Long-term Debt

On June 29, 2018, the Company entered into a new credit agreement (the "Credit Agreement") with BMO Harris Bank N.A. ("BMO") that provided for the assignment and assumption of the previously existing loans between the Company and Bank of Montreal and subsequent amendments (the "2016 Credit Agreement"), into a term loan (the "Term Loan") and revolving credit loans (each a "Revolving Loan" and, collectively, the "Revolving Loans," and, together with the Term Loan, the "Loans"). Pursuant to the Credit Agreement, BMO agreed to make the Term Loan to the Company in a principal amount not to exceed $35,000 and the Company may, from time to time prior to the maturity date, enter into Revolving Loans in amounts not to exceed, in the aggregate, $50,000 (the "Revolving Credit Commitment"). The Credit Agreement also allows the Company to obtain Letters of Credit from BMO, which if drawn upon by the beneficiary thereof and paid by BMO, would become Revolving Loans.

The Credit Agreement provides that the Company may elect that the Term Loan and each Revolving Loan to be either "LIBOR Loans" or "Eurodollar Loans." LIBOR Loans will bear interest at an annual rate equal to the sum of a specified margin (the "Applicable Margin," determined by the Company's total funded debt to EBITDA ratio) plus the Monthly Reset LIBOR Rate from time to time in effect. Eurodollar Loans will bear interest at an annual rate equal to the sum of the Applicable Margin plus the Adjusted LIBOR applicable for such interest period. The Adjusted LIBOR will be calculated as follows:

$$\text{Adjusted LIBOR} = \frac{\text{LIBOR}}{1 - \text{Eurodollar Reserve Percentage}}$$

In calculating the Eurodollar Rate, the Eurodollar Reserve Percentage is equal to the maximum reserve percentage at which reserves are imposed by the Board of Governors of the Federal Reserve System on "eurocurrency liabilities," as defined in such Board's Regulation D.

In addition to the monthly interest payments and any mandatory principal payments required by the Credit Agreement (if applicable), the Company will be responsible for paying a quarterly Revolving Credit Commitment Fee and quarterly Letter of Credit Fees. The Revolving Credit Commitment Fee will be paid at an annual rate equal to the Applicable Margin on the average daily unused portion of the Revolving Credit Commitment. The Letter of Credit Fee shall be paid at the Applicable Margin for Revolving Loans that are Eurodollar Loans on the daily average face amount of Letters of Credit outstanding during the preceding calendar quarter. The Company may prepay the Loans (or any one of the Loans), subject to certain limitations.

Borrowings under the Credit Agreement are secured by substantially all of the Company's personal property, including accounts receivable, inventory, machinery and equipment, and intellectual property, and the personal property of Mill-Log Equipment Co., Inc. ("Mill-Log"), a wholly-owned domestic subsidiary of the Company. The Company has also pledged 100% of its equity interests in certain domestic subsidiaries and 65% of its equity interests in certain foreign subsidiaries. To effect these security interests, the Company and Mill-Log entered into various amendments and assignment agreements that consent to the assignment to BMO of certain agreements previously entered into between the Company and Mill-Log with Bank of Montreal in connection with the 2016 Credit Agreement. The Company also entered into a Collateral Assignment of Rights under Purchase Agreement for its acquisition of Veth Propulsion Holding, B.V., ("Veth Propulsion") described in Note R.

Upon the occurrence of an event of default, BMO may take the following actions upon written notice to the Company: (1) terminate its remaining obligations under the Credit Agreement; (2) declare all amounts outstanding under the Credit Agreement to be immediately due and payable; and (3) demand the Company to immediately cash collateralize letter of credit obligations in an amount equal to 105% of the aggregate letter of credit obligations or a greater amount if BMO determines a greater amount is necessary. If such event of default is due to the Company's bankruptcy, BMO may take the three actions listed above without notice to the Company.

Long-term debt consisted of the following at June 30:

	2018	2017
Revolving loan agreement	$4,787	$6,285
Other	37	38
Total long-term debt	$4,824	$6,323

As of June 30, 2018, the balance of $4,787 represents drawings under the Revolving Loan at an interest rate of 4.25%, and the Company had not drawn on the Term Loan. As of June 30, 2017, the balance pertains to revolving loan drawings under the 2016 Credit Agreement.

As of June 30, 2018, the Company's borrowing capacity under the terms of the Credit Agreement was approximately $53,348, and the Company had approximately $45,213 of available borrowings. As of June 30, 2018, the interest rate under this arrangement was 4.25%.

On July 2, 2018, in connection with the acquisition of Veth Propulsion, as described in Note R, the Company drew a total of $60,729 of additional borrowings on the new credit facility, consisting of a $35,000 Term Loan payable and revolver borrowings of $25,729.

The aggregate scheduled maturities of outstanding long-term debt obligations in subsequent years are as follows:

Fiscal Year	
2019	$ 3
2020	3
2021	3
2022	3
2023	4,787
Thereafter	25
	$4,824

Other lines of credit

The Company has established unsecured lines of credit, which may be withdrawn at the option of the banks. Under these arrangements, the Company has unused and available credit lines of $1,477 with a weighted average interest rate of 5.0% as of June 30, 2018, and $1,472 with a weighted average interest rate of 4.9% as of June 30, 2017.

H. LEASE COMMITMENTS

The Company leases certain office and warehouse space, as well as production and office equipment. Approximate future minimum rental commitments under noncancellable operating leases are as follows:

Fiscal Year	
2019	$2,194
2020	1,875
2021	1,193
2022	747
2023	623
Thereafter	689
	$7,321

Total rent expense for operating leases approximated $2,665, $2,982 and $3,240 in fiscal 2018, 2017 and 2016, respectively.

I. SHAREHOLDERS' EQUITY

The total number of shares of common stock outstanding at June 30, 2018, 2017 and 2016, was 11,553,685, 11,519,133 and 11,350,174, respectively. At June 30, 2018, 2017 and 2016, treasury stock consisted of 1,545,783, 1,580,335 and 1,749,294 shares of common stock, respectively. The Company issued 67,286, 168,959 and 83,377 shares of treasury stock in fiscal 2018, 2017 and 2016, respectively, to fulfill its obligations under the stock option plans and restricted stock grants. The Company also recorded forfeitures of 32,734 and 0 shares of previously issued restricted stock in fiscal 2018 and 2017, respectively. The difference between the cost of treasury shares and the option price is recorded in common stock.

Under an authorization given by the Board of Directors on July 27, 2012, the Company is permitted to make open market purchases of its common stock. The Company did not make any open market purchases during the three most recent fiscal years. As of June 30, 2018, 2017 and 2016, 315,000 shares remain authorized for purchase.

Cash dividends per share were $0.00, $0.00 and $0.18 in fiscal 2018, 2017 and 2016, respectively.

The Company is authorized to issue 200,000 shares of preferred stock, none of which have been issued. The Company has designated 150,000 shares of the preferred stock as Series A Junior Preferred Stock.

The components of accumulated other comprehensive loss included in equity as of June 30, 2018 and 2017, are as follows:

	2018	2017
Translation adjustments	$ 7,085	$ 6,130
Benefit plan adjustments, net of income taxes of $11,494 and $21,601, respectively	(30,877)	(38,801)
Accumulated other comprehensive loss	$(23,792)	$(32,671)

A reconciliation for the changes in accumulated other comprehensive income (loss), net of tax, by component for the years ended June 30, 2016, June 30, 2017 and June 30, 2018 is as follows:

	Translation Adjustment	Benefit Plan Adjustment
Balance at June 30, 2015	$6,740	$(42,221)
Other comprehensive loss before reclassifications	(1,582)	(10,101)
Amounts reclassified from accumulated other comprehensive income	—	3,021
Net current period other comprehensive loss	(1,582)	(7,080)
Balance at June 30, 2016	$5,158	$(49,301)

	Translation Adjustment	Benefit Plan Adjustment
Balance at June 30, 2016	$5,158	$(49,301)
Other comprehensive income before reclassifications	972	8,025
Amounts reclassified from accumulated other comprehensive income	—	2,475
Net current period other comprehensive income	972	10,500
Balance at June 30, 2017	$6,130	$(38,801)

	Translation Adjustment	Benefit Plan Adjustment
Balance at June 30, 2017	$6,130	$(38,801)
Other comprehensive income before reclassifications	955	5,824
Amounts reclassified from accumulated other comprehensive income	—	2,100
Net current period other comprehensive income	955	7,924
Balance at June 30, 2018	$7,085	$(30,877)

A reconciliation for the reclassifications out of accumulated other comprehensive income (loss), net of tax for the year ended June 30, 2016, is as follows:

Amortization of benefit plan items	Amount Reclassified
Actuarial losses	$(4,355)
Transition asset and prior service benefit	(92)
Total before tax benefit	(4,447)
Tax benefit	1,426
Total reclassification, net of tax	$(3,021)

A reconciliation for the reclassifications out of accumulated other comprehensive income (loss), net of tax for the year ended June 30, 2017, is as follows:

Amortization of benefit plan items	Amount Reclassified
Actuarial losses	$(3,821)
Transition asset and prior service benefit	(101)
Total before tax benefit	(3,922)
Tax benefit	1,447
Total reclassification, net of tax	$(2,475)

A reconciliation for the reclassifications out of accumulated other comprehensive income (loss), net of tax for the year ended June 30, 2018, is as follows:

Amortization of benefit plan items	Amount Reclassified
Actuarial losses	$(3,053)
Transition asset and prior service benefit	103
Total before tax benefit	(2,950)
Tax benefit	850
Total reclassification, net of tax	$(2,100)

J. BUSINESS SEGMENTS AND FOREIGN OPERATIONS

The Company and its subsidiaries are engaged in the manufacture and sale of marine and heavy duty off-highway power transmission equipment. Principal products include marine transmissions, surface drives, propellers and boat management systems, as well as power-shift transmissions, hydraulic torque converters, power take-offs, industrial clutches and controls systems. The Company sells to both domestic and foreign customers in a variety of market areas, principally pleasure craft, commercial and military marine markets, as well as in the energy and natural resources, government and industrial markets.

Net sales by product group is summarized as follows:

	2018	2017	2016
Industrial	$ 30,888	$ 28,769	$ 32,437
Land-based transmissions	107,169	42,386	29,028
Marine and propulsion systems	96,785	91,629	98,925
Other	5,891	5,398	5,892
Total	$240,733	$168,182	$166,282

Industrial products include clutches, power take-offs and pump drives sold to the agriculture, recycling, construction and oil and gas markets. The land-based transmission products include applications for oil field and natural gas, military and airport rescue and fire fighting. The marine and propulsion systems include marine transmission, controls, surface drives, propellers and boat management systems for the global commercial marine, pleasure craft and patrol boat markets. Other includes non-Twin Disc manufactured product sold through Company-owned distribution entities.

The Company has two reportable segments: manufacturing and distribution. Its segment structure reflects the way management makes operating decisions and manages the growth and profitability of the business. It also corresponds with management's approach of allocating resources and assessing the performance of its segments. The accounting practices of the segments are the same as those described in the summary of significant accounting policies. Transfers among segments are at established inter-company selling prices. Management evaluates the performance of its segments based on net earnings.

Information about the Company's segments is summarized as follows:

2018	Manufacturing	Distribution	Total
Net sales	$216,383	$84,688	$301,071
Intra-segment sales	22,912	8,743	31,655
Inter-segment sales	26,074	2,609	28,683
Interest income	16	18	34
Interest expense	275	—	275
Income taxes	15,782	588	16,370
Depreciation and amortization	5,632	452	6,084
Net income attributable to Twin Disc	22,799	1,067	23,866
Assets	265,260	46,860	312,120
Expenditures for segment assets	5,482	248	5,730
2017			
Net sales	$146,491	$67,804	$214,295
Intra-segment sales	13,146	7,296	20,442
Inter-segment sales	22,921	2,750	25,671
Interest income	42	32	74
Interest expense	301	—	301
Income taxes	1,684	784	2,468
Depreciation and amortization	6,125	425	6,550
Net income attributable to Twin Disc	629	2,438	3,067
Assets	222,136	50,418	272,554
Expenditures for segment assets	2,674	290	2,964
2016			
Net sales	$140,965	$74,199	$215,164
Intra-segment sales	11,476	7,854	19,330
Inter-segment sales	26,883	2,669	29,552
Interest income	117	25	142
Interest expense	397	1	398
Income taxes	(2,554)	108	(2,446)
Depreciation and amortization	7,536	471	8,007
Net (loss) income attributable to Twin Disc	(12,694)	762	(11,932)
Assets	221,590	52,719	274,309
Expenditures for segment assets	3,850	188	4,038

The following is a reconciliation of reportable segment net sales and net income (loss) to the Company's consolidated totals:

	2018	2017	2016
Net sales:			
Total net sales from reportable segments	$301,071	$214,295	$215,164
Elimination of inter-company sales	(60,338)	(46,113)	(48,882)
Total consolidated net sales	$240,733	$168,182	$166,282
Net income (loss) attributable to Twin Disc:			
Total net income (loss) from reportable segments	$ 23,866	$ 3,067	$ (11,932)
Other adjustments and corporate expenses	(14,338)	(9,361)	(1,172)
Total consolidated net income (loss) attributable to Twin Disc	$ 9,528	$(6,294)	$(13,104)

Corporate expenses pertain to certain costs that are not allocated to the reportable segments, primarily consisting of unallocated corporate overhead costs, including administrative functions and global functional expenses.

Other significant items:	Segment Totals	Adjustments	Consolidated Totals
2018			
Interest income	$ 34	$ 21	$ 55
Interest expense	275	7	282
Income taxes	16,370	(11,597)	4,773
Depreciation and amortization	6,084	380	6,464
Assets	312,120	(77,407)	234,713
Expenditures for segment assets	5,730	598	6,328
2017			
Interest income	$ 74	$ (2)	$ 72
Interest expense	301	2	303
Income taxes	2,468	(5,882)	(3,414)
Depreciation and amortization	6,550	467	7,017
Assets	272,554	(61,656)	210,898
Expenditures for segment assets	2,964	169	3,133
2016			
Interest income	$ 142	$ 5	$ 147
Interest expense	398	28	426
Income taxes	(2,446)	(9,836)	(12,282)
Depreciation and amortization	8,007	840	8,847
Assets	274,309	(60,387)	213,922
Expenditures for segment assets	4,038	176	4,214

All adjustments represent inter-company eliminations and corporate amounts.

Geographic information about the Company is summarized as follows:

	2018	2017	2016
Net sales:			
United States	$141,705	$ 82,730	$ 77,147
Canada	13,397	9,962	8,699
Italy	12,551	12,176	13,294
Australia	12,479	10,913	9,943
China	11,664	7,936	9,019
Other countries	48,937	44,465	48,180
Total	$240,733	$168,182	$166,282

Net sales by geographic region are based on product shipment destination.

Long-lived assets primarily pertain to property, plant and equipment and exclude goodwill and other intangibles. They are summarized as follows:

	2018	2017
Long-lived assets:		
United States	$35,651	$34,310
Belgium	7,321	7,399
Switzerland	6,841	7,324
Italy	1,630	1,829
Other countries	1,347	1,810
Total	$52,790	$52,672

The Company has one distributor customer, primarily of its manufacturing segment, that accounted for 10% of total Company sales for fiscal 2018. The Company has another distributor customer, primarily of its manufacturing segment, that accounted for 11% and 12% of total Company sales for fiscal 2017 and fiscal 2016, respectively. A third distributor customer accounted for 12% of total Company sales in fiscal 2016.

K. STOCK-BASED COMPENSATION

In fiscal 2011, the Company adopted the Twin Disc, Incorporated 2010 Stock Incentive Plan for Non-Employee Directors (the "2010 Directors' Plan"), a plan to grant non-employee directors equity-based awards up to 250,000 shares of common stock, and the Twin Disc, Incorporated 2010 Long-Term Incentive Compensation Plan (the "2010 Employee Incentive Plan"), a plan under which officers and key employees may be granted equity-based awards up to 650,000 shares of common stock. Equity-based awards granted under these plans include performance shares and restricted stock. Shares available for future awards as of June 30 were as follows:

	2018	2017
2010 Employee Incentive Plan	—	97,609
2010 Directors' Plan	80,938	100,426

Performance Stock Awards ("PSA")

In fiscal 2018, 2017 and 2016, the Company granted a target number of 54,854, 109,598 and 60,466 PSAs, respectively, to various employees of the Company, including executive officers.

The PSAs granted in fiscal 2018 will vest if the Company achieves performance-based target objectives relating to average return on invested capital, average annual sales and average annual Earnings Per Share ("EPS") (as defined in the PSA Grant Agreement), in the cumulative three fiscal year period ending June 30, 2020. These PSAs are subject to adjustment if the Company's return on invested capital, net sales, and EPS for the period falls below or exceeds the specified target objective, and the maximum number of performance shares that can be awarded if the target objective is exceeded is 69,180. Based upon favorable actual results to date, the Company is currently accruing compensation expense for these PSAs.

The PSAs granted in fiscal 2017 will vest if the Company achieves performance-based target objectives relating to average return on invested capital, average annual sales and average annual EPS (as defined in the PSA Grant Agreement), in the cumulative three fiscal year period ending June 30, 2019. These PSAs are subject to adjustment if the Company's return on invested capital, net sales and EPS for the period falls below or exceeds the specified target objective, and the maximum number of performance shares that can be awarded if the target objective is exceeded is 149,397. Based upon favorable actual results to date, the Company is currently accruing compensation expense for the portion of the PSAs relating to the average annual net sales and EPS measures. The Company is currently not accruing compensation expense for the portion of the PSAs relating to the average return on invested capital measure.

The portion of the PSAs granted in fiscal 2016 relating to the Total Shareholder Return ("TSR") measure vested on June 30, 2018. The Company recorded compensation expense on the TSR portion of these PSAs in fiscal 2018, 2017, and 2016. No compensation expense was recognized on the portion of these PSAs relating to the average annual net sales and economic profit measures because the target performance levels were not met; these shares expired on June 30, 2018.

There were 145,718, 170,064 and 72,217 unvested PSAs outstanding at June 30, 2018, 2017 and 2016, respectively. The fair value of the PSAs (on the date of grant) is expensed over the performance period for the shares that are expected to ultimately vest. The compensation expense for the year ended June 30, 2018, 2017 and 2016, related PSAs, approximated $574, $59 and $54, respectively. The tax benefit from compensation expense for the year ended June 30, 2018, 2017 and 2016, related PSAs, approximated $172, $22 and $20, respectively. The weighted average grant date fair value of the unvested awards at June 30, 2018, was $12.29. At June 30, 2018, the Company had $1,276 of unrecognized compensation expense related to the unvested shares that would vest if the specified target objective was achieved for the fiscal 2018 and 2017 awards. The total fair value of performance stock awards vested in fiscal 2018 was $272. The total fair value of performance stock awards vested in fiscal 2017 and 2016 was $0.

Restricted Stock Awards ("RS")

The Company has unvested RS outstanding that will vest if certain service conditions are fulfilled. The fair value of the RS grants is recorded as compensation over the vesting period, which is generally 1 to 3 years. During fiscal 2018, 2017 and 2016, the Company granted 85,327, 181,828 and 95,738 service based restricted shares, respectively, to employees and non-employee directors in each year. A total of 32,734, 0 and 1,750 shares of restricted stock were forfeited during fiscal 2018, 2017 and 2016, respectively. There were 237,657, 269,584 and 142,971 unvested shares outstanding at June 30, 2018, 2017 and 2016, respectively. Compensation expense of $1,488, $1,555 and $1,241 was recognized during the year ended June 30, 2018, 2017 and 2016, respectively, related to these service-based awards. The tax benefit from compensation expense for the year ended June 30, 2018, 2017 and 2016, related to these service-based awards, approximated $446, $567 and $457, respectively. The total fair value of restricted stock grants vested in fiscal 2018, 2017 and 2016 was $1,809, $587 and $681, respectively. As of June 30, 2018, the Company had $1,137 of unrecognized compensation expense related to restricted stock which will be recognized over the next three years.

Stock Options

The 2010 Directors' Plan may grant options to purchase shares of common stock, at the discretion of the Board of Directors, to non-employee directors who are elected or re-elected to the board, or who continue to serve on the board. Such options carry an exercise price equal to the fair market value of the Company's common stock as of the date of grant, vest immediately, and expire ten years after the date of grant. Options granted under the 2010 Employee Incentive Plan are determined to be non-qualified or incentive stock options as of the date of grant, and may carry a vesting schedule. For options under the 2010 Employee Incentive Plan that are intended to qualify as incentive stock options, if the optionee owns more than 10% of the total combined voting power of the Company's stock, the price will not be less than 110% of the grant date fair market value and the options expire five years after the date of grant. There were no incentive options granted to a greater than 10% shareholder during the years presented. There were no options outstanding under the 2010 Directors' Plan and the 2010 Employee Incentive Plan as of June 30, 2018 and 2017.

2004 Plans

The Company has 7,200 non-qualified stock options outstanding as of June 30, 2018, under the 2004 Twin Disc, Incorporated Plan for Non-Employee Directors and 2004 Twin Disc, Incorporated Stock Incentive Plan. The 2004 plans were terminated during 2011, except options then outstanding will remain so until exercised or until they expire.

Stock option transactions under the 2004 plans during 2018 were as follows:

	2018	Weighted Average Price	Weighted Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
Non-qualified stock options:				
Options outstanding at beginning of year	13,200	$16.47		
Granted	—	—		
Canceled/Expired	(3,600)	27.55		
Exercised	(2,400)	12.31		
Options outstanding at June 30	7,200	$12.31	1.50	$90.2

Options price range ($10.01 – $14.61)

The Company historically computes its windfall tax pool using the shortcut method. ASC 718, "Compensation – Stock Compensation," requires the Company to expense the cost of employee services received in exchange for an award of equity instruments using the fair-value-based method. All options were 100% vested at the adoption of this statement.

During fiscal 2018, 2017 and 2016 the Company granted no non-qualified stock options and all non-qualified stock options from prior periods have fully vested. As a result, no compensation cost has been recognized in the Consolidated Statements of Operations and Comprehensive Income for fiscal 2018, 2017 and 2016, respectively.

The total intrinsic value of options exercised during the years ended June 30, 2018, 2017 and 2016, was approximately $38, $0 and $4, respectively.

L. ENGINEERING AND DEVELOPMENT COSTS

Engineering and development costs include research and development expenses for new products, development and major improvements to existing products, and other costs for ongoing efforts to refine existing products. Research and development costs charged to operations totaled $1,610, $1,547 and $1,805 in fiscal 2018, 2017 and 2016, respectively. Total engineering and development costs were $9,932, $8,888 and $9,481 in fiscal 2018, 2017 and 2016, respectively.

M. PENSION AND OTHER POSTRETIREMENT BENEFIT PLANS

The Company has non-contributory, qualified defined benefit pension plans covering substantially all domestic employees hired prior to October 1, 2003, and certain foreign employees. Domestic plan benefits are based on years of service, and, for salaried employees, on average compensation for benefits earned prior to January 1, 1997, and on a cash balance plan for benefits earned from January 1, 1997, through July 31, 2009, at which time the Company froze future accruals under domestic defined benefit pension plans. The Company's funding policy for the plans covering domestic employees is to contribute an actuarially determined amount which falls between the minimum required contribution and maximum amount that can be deducted for federal income tax purposes.

In addition, the Company has unfunded, non-qualified retirement plans for certain management employees and Directors. In the case of management employees, benefits are based on an annual credit to a bookkeeping account, intended to restore the benefits that would have been earned under the qualified plans, but for the earnings limitations under the Internal Revenue Code. In the case of Directors, benefits are based on years of service on the Board. All benefits vest upon retirement from the Company.

In addition to providing pension benefits, the Company provides other postretirement benefits, including health care and life insurance benefits for certain domestic retirees. All employees retiring after December 31, 1992, and electing to continue health care coverage through the Company's group plan, are required to pay 100% of the premium cost.

The measurement date for the Company's pension and postretirement benefit plans in fiscal 2018 and 2017 was June 30.

Obligations and Funded Status

The following table sets forth the Company's defined benefit pension plans' and other postretirement benefit plans' funded status and the amounts recognized in the Company's balance sheets and statement of operations and comprehensive income as of June 30:

	Pension Benefits		Other Postretirement Benefits	
	2018	2017	2018	2017
Change in benefit obligation:				
Benefit obligation, beginning of year	$118,170	$129,056	$11,574	$ 15,933
Service cost	861	1,009	20	20
Interest cost	3,979	4,213	325	420
Actuarial (gain) loss	(8,690)	(6,980)	(2,608)	(3,380)
Contributions by plan participants	105	139	440	472
Benefits paid	(9,413)	(9,267)	(1,674)	(1,891)
Benefit obligation, end of year	$105,012	$118,170	$ 8,077	$ 11,574
Change in plan assets:				
Fair value of assets, beginning of year	$ 94,372	$ 94,164	$ —	$ —
Actual return on plan assets	2,894	7,967	—	—
Employer contribution	2,300	1,369	1,234	1,419
Contributions by plan participants	105	139	440	472
Benefits paid	(9,413)	(9,267)	(1,674)	(1,891)
Fair value of assets, end of year	$90,258	$ 94,372	$ —	$ —
Funded status	$ (14,754)	$ (23,798)	$ (8,077)	$ (11,574)
Amounts recognized in the balance sheet consist of:				
Other assets – noncurrent	$ 157	$ 694	$ —	$ —
Accrued liabilities – current	(679)	(706)	(1,241)	(1,654)
Accrued retirement benefits – noncurrent	(14,232)	(23,786)	(6,836)	(9,920)
Net amount recognized	$ (14,754)	$ (23,798)	$ (8,077)	$ (11,574)
Amounts recognized in accumulated other comprehensive loss consist of (net of tax):				
Net transition obligation	$ 564	$ 790	$ —	$ —
Actuarial net loss	31,146	37,140	(833)	871
Net amount recognized	$ 31,710	$ 37,930	$ (833)	$ 871

The amounts in accumulated other comprehensive loss that are expected to be recognized as components of net periodic benefit cost during the next fiscal year for the qualified domestic defined benefit and other postretirement benefit plans are as follows:

	Pension Benefits	Other Postretirement Benefits
Net transition obligation	$ 101	$ (275)
Actuarial net loss	2,711	—
Net amount to be recognized	$2,812	$(275)

The accumulated benefit obligation for all defined benefit pension plans was approximately $105,012 and $118,170 at June 30, 2018 and 2017, respectively.

Information for pension plans with an accumulated benefit obligation in excess of plan assets:

	June 30, 2018	June 30, 2017
Projected and accumulated benefit obligation	$100,699	$117,250
Fair value of plan assets	85,788	92,758

Components of Net Periodic Benefit Cost	Pension Benefits		
	2018	2017	2016
Service cost	$ 868	$1,009	$ 770
Interest cost	3,981	4,213	4,968
Expected return on plan assets	(6,041)	(5,902)	(6,874)
Amortization of transition obligation	36	35	33
Amortization of prior service cost	67	66	59
Amortization of actuarial net loss	3,021	3,591	3,627
Net periodic benefit cost	$1,932	$3,012	$2,583

	Other Postretirement Benefits		
	2018	2017	2016
Service cost	$ 20	$ 21	$ 28
Interest cost	325	420	604
Amortization of prior service cost	(206)	—	—
Amortization of actuarial net loss	32	230	728
Net periodic benefit cost	$171	$671	$1,360

Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income for Fiscal 2018 (Pre-tax):

	Pension Benefits	Other Postretirement Benefits
Net gain	$(5,643)	$ (940)
Prior service cost	—	(1,668)
Amortization of transition asset	(34)	—
Amortization of prior service (cost) benefit	(67)	206
Amortization of net (loss) gain	(2,952)	(32)
Total recognized in other comprehensive income	(8,696)	(2,434)
Net periodic benefit cost	1,932	171
Total recognized in net periodic benefit cost and other comprehensive income	$(6,764)	$(2,263)

Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income for Fiscal 2017 (Pre-tax):

	Pension Benefits	Other Postretirement Benefits
Net gain	$(9,057)	$(3,380)
Prior service cost	(10)	—
Amortization of transition asset	(35)	—
Amortization of prior service cost	(66)	—
Amortization of net (loss) gain	(3,613)	(230)
Total recognized in other comprehensive income	(12,781)	(3,610)
Net periodic benefit cost	3,012	671
Total recognized in net periodic benefit cost and other comprehensive income	$(9,769)	$(2,939)

Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income for Fiscal 2016 (Pre-tax):

	Pension Benefits	Other Postretirement Benefits
Net loss	$15,514	$ 496
Prior service cost	58	—
Amortization of transition asset	(33)	—
Amortization of prior service cost	(59)	—
Amortization of net (loss) gain	(3,627)	(728)
Total recognized in other comprehensive income	11,853	(232)
Net periodic benefit cost	2,583	1,360
Total recognized in net periodic benefit cost and other comprehensive income	$14,436	$1,128

Additional Information

	Pension Benefits		Other Postretirement Benefits	
Assumptions	2018	2017	2018	2017
Weighted average assumptions used to determine benefit obligations at June 30:				
Discount rate	4.01%	3.51%	4.09%	3.41%
Expected return on plan assets	6.74%	6.68%		

	Pension Benefits			Other Postretirement Benefits		
	2018	2017	2016	2018	2017	2016
Weighted average assumptions used to determine net periodic benefit costs for years ended June 30:						
Discount rate	3.51%	3.35%	4.05%	3.41%	3.27%	3.93%
Expected return on plan assets	6.68%	6.57%	7.11%			

The assumed weighted-average health care cost trend rate was 7.00% in 2018, grading down to 5% in 2022. A 1% increase in the assumed health care cost trend would increase the accumulated postretirement benefit obligation by approximately $107 and the service and interest cost by approximately $5. A 1% decrease in the assumed health care cost trend would decrease the accumulated postretirement benefit obligation by approximately $91 and the service and interest cost by approximately $4.

Plan Assets

The Company's Benefits Committee ("Committee"), a non-board management committee, oversees investment matters related to the Company's funded benefit plans. The Committee works with external actuaries and investment consultants on an ongoing basis to establish and monitor investment strategies and target asset allocations. The overall objective of the Committee's investment strategy is to earn a rate of return over time to satisfy the benefit obligations of the pension plans and to maintain sufficient liquidity to pay benefits and address other cash requirements of the pension plans. The Committee has established an Investment Policy Statement which provides written documentation of the Company's expectations regarding its investment programs for the pension plans, establishes objectives and guidelines for the investment of the plan assets consistent with the Company's financial and benefit-related goals, and outlines criteria and procedures for the ongoing evaluation of the investment program. The Company employs a total return on investment approach whereby a mix of investments among several asset classes are used to maximize long-term return of plan assets while avoiding excessive risk. Investment risk is measured and monitored on an ongoing basis through quarterly investment portfolio reviews, and annual liability measurements.

The Company's pension plan weighted-average asset allocations at June 30, 2018 and 2017, by asset category were as follows:

Asset Category	Target Allocation	June 30, 2018	June 30, 2017
Equity securities	51%	51%	65%
Debt securities	40%	39%	25%
Real estate	9%	10%	10%
	100%	100%	100%

Due to market conditions and other factors, actual asset allocation may vary from the target allocation outlined above. The U.S. pension plans held 98,211 shares of Company stock with a fair market value of $2,437.6 (2.7% of total plan assets) at June 30, 2018, and 98,211 shares with a fair market value of $1,585.1 (1.7% of total plan assets) at June 30, 2017.

The plans have a long-term return assumption of 7.0%. This rate was derived based upon historical experience and forward-looking return expectations for major asset class categories.

Fair value is defined as the price that would be received on the sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The inputs used to measure fair value are classified into the following hierarchy:

Level I	Unadjusted quoted prices in active markets for identical instruments
Level II	Unadjusted quoted prices in active markets for similar instruments, or Unadjusted quoted prices for identical or similar instruments in markets that are not active, or Other inputs that are observable in the market or can be corroborated by observable market data
Level III	Use of one or more significant unobservable inputs

The following table presents plan assets using the fair value hierarchy as of June 30, 2018:

	Total	Level I	Level II	Level III
Cash and cash equivalents	$ 1,156	$ 1,156	$ —	$ —
Equity securities:				
Company common stock (a)	2,438	2,438	—	—
Common stock (a)	17,373	17,373	—	—
Mutual funds (b)	8,554	8,554	—	—
Annuity contracts (c)	6,113	—	—	6,113
Total	$35,634	$29,521	$ —	$6,113
Investments Measured at Net Asset Value (d)	54,624			
Total	$90,258			

The following table presents plan assets using the fair value hierarchy as of June 30, 2017:

	Total	Level I	Level II	Level III
Cash and cash equivalents	$ 1,203	$ 1,203	$ —	$ —
Equity securities:				
Company common stock (a)	1,585	1,585	—	—
Common stock (a)	23,263	23,263	—	—
Mutual funds (b)	11,259	11,259	—	—
Annuity contracts (c)	7,779	—	—	7,779
Total	$45,089	$37,310	$ —	$7,779
Investments Measured at Net Asset Value (d)	49,283			
Total	$94,372			

(a) Common stock is valued at the closing price reported on the active market on which the individual securities are traded. These securities include U.S. equity securities invested in companies that are traded on exchanges inside the U.S. and international equity securities invested in companies that are traded on exchanges outside the U.S.

(b) Mutual funds are valued at the daily closing price as reported by the fund. Mutual funds held by the Company's funded benefit plans are open-end mutual funds that are registered with the Securities Exchange Commission. These funds are required to publish their daily net asset value ("NAV") and to transact at that price. The mutual funds held by the Company's funded benefit plans are deemed to be actively traded.

(c) Annuity contracts represent contractual agreements in which payments are made to an insurance company, which agrees to pay out an income or lump sum amount at a later date. Annuity contracts are valued at the net present value of future cash flows.

(d) In accordance with ASC 820-10, certain investments that were measured at net asset value per share (or its equivalent) have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the fair value of plan assets at the end of the year.

The following table sets forth additional disclosures for the fair value measurement of the fair value of pension plan assets that calculate fair value based on NAV per share practical expedient as of June 30, 2018 and June 30, 2017:

	2018	2017
Fixed income funds	$31,852	$20,819
International equity securities	3,294	4,760
Real estate	8,218	8,566
Hedged equity mutual funds	11,260	15,138
Total	$54,624	$49,283

The following tables present a reconciliation of the fair value measurements using significant unobservable inputs (Level III) as of June 30, 2018 and 2017:

	2018	2017
Beginning balance	$7,779	$9,031
Actual return on plan assets:		
Relating to assets still held at reporting date	(58)	659
Purchases, sales and settlements, net	(1,608)	(1,911)
Ending balance	$6,113	$7,779

Cash Flows

Contributions

The Company expects to contribute $2,382 to its defined benefit pension plans in fiscal 2019.

Estimated Future Benefit Payments

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

	Pension Benefits	Other Postretirement Benefits
2019	$9,684	$1,267
2020	8,886	989
2021	8,211	917
2022	8,027	835
2023	7,648	762
Years 2024–2028	33,917	2,837

The Company does not expect to make any Part D reimbursements for the periods presented.

The Company sponsors defined contribution plans covering substantially all domestic employees and certain foreign employees. These plans provide for employer contributions based primarily on employee participation. The total expense under the plans was $1,935, $1,658 and $2,058 in fiscal 2018, 2017 and 2016, respectively.

N. INCOME TAXES

United States and foreign income (loss) before income taxes and minority interest were as follows:

	2018	2017	2016
United States	$ 8,679	$(13,048)	$(29,293)
Foreign	5,741	3,519	3,998
	$14,420	$ (9,529)	$(25,295)

The provision (benefit) for income taxes is comprised of the following:

Currently payable:	2018	2017	2016
Federal	$ 234	$ (191)	$ (1,683)
State	135	251	136
Foreign	1,400	771	1,468
	1,769	831	(79)
Deferred:			
Federal	5,529	(3,906)	(10,978)
State	167	(706)	(787)
Foreign	(2,692)	367	(438)
	(3,004)	(4,245)	(12,203)
	$ 4,773	$(3,414)	$(12,282)

The components of the net deferred tax asset as of June 30 are summarized in the table below:

Deferred tax assets:	2018	2017
Retirement plans and employee benefits	$ 6,910	$13,755
Foreign tax credit carryforwards	6,866	7,620
Federal tax credits	774	1,131
State net operating loss and other state credit carryforwards	1,190	1,213
Federal net operating loss	—	2,299
Inventory	1,259	1,992
Reserves	1,099	833
Foreign NOL carryforwards	2,940	3,606
Accruals	324	460
Other assets	403	665
	21,765	33,574
Deferred tax liabilities:		
Property, plant and equipment	3,473	5,488
Intangibles	1,209	971
Other liabilities	230	125
	4,912	6,584
Valuation Allowance	—	(3,803)
Total net deferred tax assets	$16,853	$23,187

The Company maintains valuation allowances when it is more likely than not that all or a portion of a deferred tax asset will not be realized. Changes in valuation allowances from period to period are included in the tax provision in the period of change. In determining whether a valuation allowance is required, the Company takes into account such factors as prior earnings history, expected future earnings, carryback and carryforward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset. During fiscal 2018, the Company reported operating income in certain foreign jurisdictions where the loss carryforward period is unlimited. The Company has evaluated the likelihood of whether the net deferred tax assets related to these jurisdictions would be realized and concluded that, based on recent operational changes implemented, (a) it is more likely than not that all of deferred tax assets would be realized; and that (b) a full valuation allowance on the balance of deferred tax assets relating to these jurisdictions is no longer necessary. The company recorded a net decrease in the valuation allowance of ($3,803) in fiscal 2018 due to higher income and continued utilization of operating losses in these jurisdictions. Management believes that it is more likely than not that the results of future operations will generate sufficient taxable income and foreign source income to realize all the deferred tax assets.

Following is a reconciliation of the applicable U.S. federal income taxes to the actual income taxes reflected in the statements of operations:

	2018	2017	2016
U.S. federal income tax at 27.56% (34% in prior years)	$3,974	$(3,240)	$ (8,601)
Increases (reductions) in tax resulting from:			
Foreign tax items	675	(179)	(2,525)
State taxes	272	(499)	(374)
Valuation allowance	(3,803)	(47)	(1,288)
Change in prior year estimate	(89)	899	473
Research and development tax credits	(162)	(230)	(348)
Section 199 deduction	(114)	—	—
Unrecognized tax benefits	(42)	65	(21)
Stock Compensation	(114)	—	—
Goodwill impairment	—	—	420
Rate changes	3,786	—	—
Deferred tax basis adjustments	431	—	—
Other, net	(41)	(183)	(18)
	$4,773	$(3,414)	$(12,282)

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act makes broad and complex changes to the Internal Revenue Code. The Tax Act is generally applicable for tax years beginning after December 31, 2017, which is the Company's fiscal year 2019. However, several provisions of the Tax Act have differing effective dates, meaning these provisions have an impact upon the Company's financial statements for fiscal year 2018. The provisions impacting the Company's fiscal year 2018 financial statements include the reduction of the U.S. federal corporate tax rate from 35% to 21%, the imposition of a one-time transition tax on the deemed repatriation of earnings from certain foreign subsidiaries, changes to the deductibility of certain meals and entertainment expenses and employee fringe benefits, and the extension of accelerated depreciation on qualified property acquired and placed in service after September 27, 2017.

The Securities and Exchange Commission issued Staff Accounting Bulletin 118 to address uncertainty regarding the application of ASC 740 to the income tax effects of the Tax Act, signed into law on December 22, 2017. The bulletin provides a measurement period (not to exceed one year from the Tax Act enactment date) for companies to complete the accounting under ASC 740. To the extent that a company's accounting for certain income tax effects is incomplete, but is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate in the financial statements, it should continue to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act.

The Tax Act results in comprehensive changes to tax reporting rules. The Company has thoroughly reviewed all provisions of the Tax Act to determine their applicability to both fiscal 2018 and future years. The Company has completed its analysis of all applicable provisions of the Tax Act and has appropriately reflected their impact in the financial statements as per current guidance. The accounting for those provisions of the Tax Act which the Company is currently subject to is disclosed below:

Reduction in the Federal Corporate Income Tax Rate: The Tax Act reduces the corporate tax rate from 35% to 21% for tax years beginning after December 31, 2017. A blended rate is calculated for non-calendar year filers resulting in a 27.56% federal tax rate for fiscal year 2018. The change in tax rate required a revaluation of the end-of-year deferred assets and liabilities of the Company. This resulted in additional tax expense of $3,786.

Deemed Repatriation Transition Tax: The deemed repatriation transition tax is a tax on previously untaxed accumulated and current earnings and profits of certain foreign subsidiaries. To determine the amount of the transition tax, the Company calculated the amount of post-1986 earnings and profits for all foreign subsidiaries as well as the amount of non-U.S. income taxes paid on such earnings. The Company calculated the amount of the transition tax and determined it to be zero based on overall net historical negative earnings and profits.

Deductible Meals & Entertainment Expenses: The Tax Act significantly revised the rules related to the deductibility of Meals & Entertainment expenses as well as certain employee fringe benefits. Entertainment expenses incurred after December 31, 2017, are 100% disallowed, with one small exception. There will also be much greater scrutiny placed on expenses for Meals to ensure they were incurred for a valid business purpose. The Company has completed a thorough analysis of every expense account in which Meals & Entertainment costs may have been recorded and has treated them accordingly based on the new rules under the Tax Act. As anticipated at the end of fiscal year 2018, the financial statement impact of this provision of the Tax Act is immaterial.

Bonus Depreciation: The Tax Act allows 100% bonus depreciation for qualified assets placed in service after September 27, 2017. The Company has identified the assets which qualify for this provision and has incorporated the additional depreciation expense into the tax provision for fiscal year 2018.

The Company has not provided additional U.S. income taxes on cumulative earnings of consolidated foreign subsidiaries that are considered to be reinvested indefinitely. The Company reaffirms its position that these earnings remain permanently invested, and has no plans to repatriate funds to the U.S. for the foreseeable future. These earnings relate to ongoing operations and were approximately $4,077 at June 30, 2018. Such earnings could become taxable upon the sale or liquidation of these foreign subsidiaries or upon dividend repatriation. It is not practicable to estimate the amount of unrecognized withholding taxes and deferred tax liability on such earnings. The Company's intent is for such earnings to be reinvested by the subsidiaries or to be repatriated only when it would be tax effective through the utilization of foreign tax credits.

Annually, the company files income tax returns in various taxing jurisdictions inside and outside the United States. In general, the tax years that remain subject to examination are 2014 through 2018 for our major operations in Italy, Belgium and Japan. The tax years open to examination in the U.S. are for years subsequent to fiscal 2015.

The Company has approximately $816 of unrecognized tax benefits as of June 30, 2018, which, if recognized would impact the effective tax rate. During the fiscal year the amount of unrecognized tax benefits decreased primarily due to reserves which were released upon the conclusion of the fiscal year 2015 IRS income tax audit. During the next twelve months, the Company anticipates closure of the Wisconsin income tax audit for the periods fiscal year 2010 through fiscal year 2013. This could result in a significant change to the unrecognized tax benefits. The Company's policy is to accrue interest and penalties related to unrecognized tax benefits in income tax expense.

Below is a reconciliation of beginning and ending amount of unrecognized tax benefits:

	June 30, 2018	June 30, 2017
Unrecognized tax benefits, beginning of year	$827	$790
Additions based on tax positions related to the prior year	—	—
Additions based on tax positions related to the current year	303	55
Reductions based on tax positions related to the prior year	(9)	(13)
Subtractions due to statutes closing	(105)	(5)
Settlements with Taxing Authorities	(200)	—
Unrecognized tax benefits, end of year	$816	$827

O. CONTINGENCIES

The Company is involved in litigation of which the ultimate outcome and liability to the Company, if any, are not presently determinable. Management believes that final disposition of such litigation will not have a material impact on the Company's results of operations, financial position or cash flows, either individually or in the aggregate.

P. RESTRUCTURING OF OPERATIONS

The Company has implemented various restructuring programs in response to unfavorable macroeconomic trends in certain of the Company's markets since the fourth quarter of fiscal 2015. These programs primarily involved the reduction of workforce in several of the Company's manufacturing locations, under a combination of voluntary and involuntary programs.

During the current year, the Company implemented additional actions to reduce personnel costs in its Belgian operations and reorganize for productivity in its European operations. These actions, together with the costs associated with the India manufacturing operations exit, resulted in pre-tax restructuring charges of $3,398, $1,791 and $921 in fiscal 2018, 2017 and 2016, respectively.

Restructuring activities since June 2015 have resulted in the elimination of 171 full-time employees in the manufacturing segment. Accumulated costs to date under these programs within the manufacturing segment through June 30, 2018, were $9,273.

The following is a roll-forward of restructuring activity:

Accrued restructuring liability, June 30, 2016	$ 801
Additions	1,791
Payments and adjustments	(2,500)
Accrued restructuring liability, June 30, 2017	92
Additions	3,398
Payments and adjustments	(3,400)
Accrued restructuring liability, June 30, 2018	$ 90

During fiscal 2016, as part of its initiative to focus resources on core manufacturing and product development activities aimed at improving profitability, the Company sold one of its distribution entities in the U.S. The proceeds of $4,100 represent the sale of distribution rights to its southeastern U.S. territories, amounting to $600, and certain assets, consisting primarily of inventories, for $3,500. The gain on sale of $445 is recorded as other operating income in the statement of operations in fiscal 2016.

Q. EARNINGS PER SHARE

The Company calculates basic earnings per share based upon the weighted average number of common shares outstanding during the period, while the calculation of diluted earnings per share includes the dilutive effect of potential common shares outstanding during the period. The calculation of diluted earnings per share excludes all potential common shares if their inclusion would have an anti-dilutive effect. Restricted stock award recipients have a non-forfeitable right to receive dividends declared by the Company, and are therefore included in computing earnings per share pursuant to the two-class method.

The components of basic and diluted earnings per share were as follows:

	2018	2017	2016
Basic:			
Net income (loss)	$9,647	$(6,115)	$(13,013)
Less: Net earnings attributable to noncontrolling interest	(119)	(179)	(91)
Less: Undistributed earnings attributable to unvested shares	(222)	—	—
Net income (loss) available to Twin Disc shareholders	9,306	(6,294)	(13,104)
Weighted average shares outstanding – basic	11,295	11,239	11,203
Basic Income (Loss) Per Share:			
Net income (loss) per share – basic	**$ 0.82**	**$ (0.56)**	**$ (1.17)**
Diluted:			
Net income (loss)	$9,647	$(6,115)	$(13,013)
Less: Net earnings attributable to noncontrolling interest	(119)	(179)	(91)
Less: Undistributed earnings attributable to unvested shares	(222)	—	—
Net income (loss) available to Twin Disc shareholders	9,306	(6,294)	(13,104)
Weighted average shares outstanding – basic	11,395	11,239	11,203
Effect of dilutive stock awards	100	—	—
Weighted average shares outstanding – diluted	11,395	11,239	11,203
Diluted Income (Loss) Per Share:			
Net income (loss) per share – diluted	**$ 0.82**	**$ (0.56)**	**$ (1.17)**

The following potential common shares were excluded from diluted EPS for the year ended June 30, 2018, because they were anti-dilutive: 61.3 related to the Company's unvested PSAs, 237.7 related to the Company's unvested RS awards, and 3.6 related to outstanding stock options.

The following potential common shares were excluded from diluted EPS for the year ended June 30, 2017, because they were anti-dilutive: 170.1 related to the Company's unvested PSAs, 269.6 related to the Company's unvested RS awards, and 13.2 related to outstanding stock options.

The following potential common shares were excluded from diluted EPS for the year ended June 30, 2016, because they were anti-dilutive: 72.2 related to the Company's unvested PSAs, 143.0 related to the Company's unvested RS awards, and 16.8 related to outstanding stock options.

R. SUBSEQUENT EVENT

On July 2, 2018, the Company completed the acquisition of 100% of the outstanding common stock of Veth Propulsion Holding, B.V. and its wholly-owned subsidiaries ("Veth Propulsion"). Veth Propulsion is a global manufacturer of highly-engineered auxiliary propulsions and propulsion machinery for maritime vessels, including rudder propellers, bow thrusters, generator sets and engine service and repair supplier of main and auxiliary marine propulsion products, based in the Netherlands. These products are complementary to and expand the Company's current product offerings in the marine and propulsion markets. Prior to the acquisition, the Company was a distributor of Veth products in North America and Asia. This acquisition was pursuant to a Share Purchase Agreement ("SPA") entered into by the Company with Veth Propulsion on June 13, 2018.

Under the terms of the SPA, the Company paid an aggregate of approximately $60,729 in cash at closing, which included a base payment plus adjustments for net cash and working capital. This amount is subject to a final determination of working capital adjustments, which is expected to settle in September 2018, and an earn-out. The maximum earn-out is approximately $4 million. The earn-out will be paid if the earnings before interest, tax, depreciation and amortization of Veth Propulsion's fiscal 2018 as defined in the SPA ("EBITDA") exceeds the agreed upon threshold amount. The earn-out may be paid in the form of Company common stock or cash, and will be determined in April 2019.

The Company financed the payment of the cash consideration through borrowings of $60,729 under a new credit facility, as described in Note G. One-time transaction costs related to the acquisition in the amount of $1,768 were recorded in fiscal 2018 and are included in marketing, engineering, and administration expenses in the accompanying consolidated statements of operations. As of June 30, 2018, in its role as a Veth distributor, the Company carried inventory in the amount of $430 and accounts receivable in the amount of $733.

The accounting for the transaction is in process. The preparation of the legacy financial information of Veth Propulsion, heretofore a foreign-owned private company that has not reported under US GAAP, is in progress. Supplemental pro forma financial information, as required, will be available when the Company files its Form 8-K/A relating to the acquisition before its required filing deadline of September 18, 2018.

TWIN DISC, INCORPORATED AND SUBSIDIARIES
SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS

for the years ended June 30, 2018, 2017 and 2016 (in thousands)

Description	Balance at Beginning of Period	Charged to Costs and Expenses	Deductions[1]	Balance at End of of Period
2018:				
Allowance for losses on accounts receivable	$1,519	$280	$ 321	$1,478
Deferred tax valuation allowance	$3,803	$ —	$3,803	$ —
2017:				
Allowance for losses on accounts receivable	$1,824	$127	$ 432	$1,519
Deferred tax valuation allowance	$3,123	$826	$ 146	$3,803
2016:				
Allowance for losses on accounts receivable	$2,183	$237	$ 596	$1,824
Deferred tax valuation allowance	$3,577	$257	$ 711	$3,123

1 Activity primarily represents amounts written-off during the year, along with other adjustments (primarily foreign currency translation adjustments).

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.

August 27, 2018

TWIN DISC, INCORPORATED

By /s/ JOHN H. BATTEN
John H. Batten
President, Chief Executive Officer

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

August 27, 2018

By /s/ DAVID B. RAYBURN
David B. Rayburn
Chairman of the Board

August 27, 2018

By /s/ JOHN H. BATTEN
John H. Batten
President, Chief Executive Officer

August 27, 2018

By /s/ JEFFREY S. KNUTSON
Jeffrey S. Knutson
Vice President – Finance, Chief Financial Officer,
Treasurer and Secretary

August 27, 2018

By /s/ DEBBIE A. LANGE
Debbie A. Lange
Corporate Controller (Chief Accounting Officer)

August 27, 2018

Michael Doar, Director
Janet P. Giesselman, Director
David W. Johnson, Director
Harold M. Stratton II, Director
David R. Zimmer, Director

By /s/ JEFFREY S. KNUTSON
Jeffrey S. Knutson
Vice President – Finance, Chief Financial Officer,
Treasurer and Secretary (Attorney in Fact)

EXHIBIT INDEX
TWIN DISC, INCORPORATED

10-K for Year Ended June 30, 2018

Exhibit	Description	Included Herewith
3a)	Restated Articles of Incorporation of Twin Disc, Incorporated (Incorporated by reference to Exhibit 3.1 of the Company's Form 8-K dated December 6, 2007). File No. 001-07635.	
3b)	Restated Bylaws of Twin Disc, Incorporated, as amended through December 13, 2013 (Incorporated by reference to Exhibit 3.1 of the Company's Form 8-K dated December 17, 2013). File No. 001-07635.	
Exhibit 10	Material Contracts	
a)	Director Tenure and Retirement Policy (Incorporated by reference to Exhibit 10a) of the Company's June 30, 2016 Form 10-K dated September 13, 2016). File No. 001-07635.	
b)	The 2004 Stock Incentive Plan as amended (Incorporated by reference to Exhibit B of the Proxy Statement for the Annual Meeting of Shareholders held on October 20, 2006). File No. 001-07635.	
c)	The 2004 Stock Incentive Plan for Non-Employee Directors as amended (Incorporated by reference to Exhibit 99 of the Company's Form 10-K for the year ended June 30, 2007). File No. 001-07635.	
d)	The Amended and Restated Twin Disc, Incorporated 2010 Long-Term Incentive Compensation Plan (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated August 5, 2015). File No. 001-07635.	
e)	The 2010 Stock Incentive Plan for Non-Employee Directors (Incorporated by reference to Appendix B of the Proxy Statement for the Annual Meeting of Shareholders held on October 15, 2010). File No. 001-07635.	
f)	The Twin Disc, Incorporated 2018 Long-Term Incentive Compensation Plan (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated August 6, 2018). File No. 001-07635.	
g)	Form of Performance Stock Award Grant Agreement for award of performance shares on July 28, 2016 (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated August 3, 2016). File No. 001-07635.	
h)	Form of Restricted Stock Award Grant Agreement for restricted stock grants on July 28, 2016 (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated August 3, 2016). File No. 001-07635.	
i)	Form of Performance Stock Award Grant Agreement for award of performance shares on August 2, 2017 (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated August 8, 2017). File No. 001-07635.	
j)	Form of Restricted Stock Award Grant Agreement for restricted stock grants on August 2, 2017 (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated August 8, 2017). File No. 001-07635.	
k)	Form of Performance Stock Award Grant Agreement for award of performance shares on August 1, 2018 (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated August 6, 2018). File No. 001-07635.	
l)	Form of Restricted Stock Award Grant Agreement for restricted stock grants on August 1, 2018 (Incorporated by reference to Exhibit 10.3 of the Company's Form 8-K dated August 6, 2018). File No. 001-07635.	
m)	Twin Disc, Incorporated Supplemental Executive Retirement Plan, amended and restated as of July 29, 2010 (Incorporated by reference to Exhibit 10.4 of the Company's Form 8-K dated August 4, 2010). File No. 001-07635.	
n)	Forms of Change in Control Severance Agreements (Incorporated by reference to Exhibits 10.4, 10.5 and 10.6 of the Company's Form 8-K dated August 6, 2018). File No. 001-07635.	
o)	Form of Indemnity Agreement (Incorporated by reference to Exhibit 10.5 of the Company's Form 8-K dated August 2, 2005). File No. 001-07635.	
p)	Credit Agreement Between Twin Disc, Incorporated and BMO Harris Bank, dated June 29, 2018 (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635	

EXHIBIT INDEX
TWIN DISC, INCORPORATED
10-K for Year Ended June 30, 2018

Exhibit 10	Material Contracts	Included Herewith
q)	Amendment and Assignment of Revolving Loan Note between Bank of Montreal and BMO Harris Bank, N.A., dated June 29, 2018. (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635.	
r)	Assignment of and Amendment to Security Agreement By and Among Bank of Montreal, BMO Harris Bank, N.A., and Twin Disc, Incorporated, dated June 29, 2018. (Incorporated by reference to Exhibit 10.3 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635.	
s)	Assignment of and Amendment to IP Security Agreement By and Among Bank of Montreal, BMO Harris Bank, N.A., and Twin Disc, Incorporated, dated June 29, 2018. (Incorporated by reference to Exhibit 10.4 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635.	
t)	Assignment of and Amendment to Pledge Agreement By and Among Bank of Montreal, BMO Harris Bank, N.A., Twin Disc, Incorporated, and Mill-Log Equipment Co., Inc., dated June 29, 2018. (Incorporated by reference to Exhibit 10.5 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635.	
u)	Assignment of and Amendment to the Guaranty Agreement By and Among Bank of Montreal, BMO Harris Bank, N.A., and Mill-Log Equipment Co., Inc., dated June 29, 2018. (Incorporated by reference to Exhibit 10.6 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635.	
v)	Assignment of and Amendment to Guarantor Security Agreement By and Among Bank of Montreal, BMO Harris Bank, N.A., and Mill-Log Equipment Co., Inc., dated June 29, 2018. (Incorporated by reference to Exhibit 10.7 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635.	
w)	Assignment of and Amendment to Negative Pledge Agreement By and Among Twin Disc, Incorporated, Bank of Montreal, and BMO Harris Bank N.A., dated June 29, 2018. (Incorporated by reference to Exhibit 10.8 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635.	
x)	Collateral Assignment of Rights under Purchase Agreement from Twin Disc, Incorporated and Twin Disc NL Holding, B.V. in favor of BMO Harris Bank N.A., dated July 2, 2018. (Incorporated by reference to Exhibit 10.9 of the Company's Form 8-K dated July 3, 2018). File No. 001-07635.	

Exhibit	Description	Included Herewith
21	Subsidiaries of the Registrant	X
23a	Consent of Independent Registered Public Accounting Firm	X
23b	Consent of Independent Registered Public Accounting Firm	X
24	Power of Attorney	X
31a	Certification	X
31b	Certification	X
32a	Certification pursuant to 18 U.S.C. Section 1350	X
32b	Certification pursuant to 18 U.S.C. Section 1350	X

EXHIBIT 21
SUBSIDIARIES OF THE REGISTRANT

Twin Disc, Incorporated, the registrant (a Wisconsin Corporation) owns directly or indirectly 100% of the following subsidiaries:

1. Twin Disc International, S.P.R.L. (a Belgian corporation)
2. Twin Disc Srl (an Italian corporation)
3. Rolla Sp Propellers SA (a Swiss corporation)
4. Twin Disc (Pacific) Pty. Ltd. (an Australian corporation)
5. Twin Disc (Far East) Ltd. (a Delaware corporation operating in Singapore and Hong Kong)
6. Twin Disc (Far East) Pte. Ltd. (a Singapore corporation)
7. Mill Log Equipment Co., Inc. (an Oregon corporation)
8. Mill Log Wilson Equipment Ltd. (a Canadian corporation)
9. Twin Disc Japan (a Japanese corporation)
10. Twin Disc Power Transmission Private, Ltd. (an Indian limited liability corporation)
11. Twin Disc Power Transmission (Shanghai) Co. Ltd. (a Chinese corporation)
12. Twin Disc Netherlands Holdings, BV (a Netherlands corporation)
13. Twin Disc NL Holding, B.V. (a Netherlands corporation)
14. Veth Propulsion Holding, B.V. (a Netherlands corporation)
15. Exploitatiemaatschappij Veth B.V. (a Netherlands corporation)
16. Veth Electra B.V. (a Netherlands corporation)
17. Veth Diesel B.V. (a Netherlands corporation)
18. Veth Propulsion B.V. (a Netherlands corporation)
19. Veth Thrusters B.V. (a Netherlands corporation)
20. Twin Disc European Distribution S.P.R.L (a Belgian corporation)

Twin Disc, Incorporated also owns 66% of Twin Disc Nico Co. LTD. (a Japanese corporation).

The registrant has neither a parent nor any other subsidiaries. All of the above subsidiaries are included in the consolidated financial statements.

EXHIBIT 23A
CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-99229, 333-119770, 333-169965, 333-169963 and 333-169962) of Twin Disc, Incorporated of our report dated August 27, 2018, relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ RSM US LLP

Milwaukee, Wisconsin
August 27, 2018

EXHIBIT 23B
CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-99229, 333-119770, 333-169965, 333-169963 and 333-169962) of Twin Disc, Incorporated of our report dated August 31, 2017 relating to the financial statements and financial statement schedule, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Milwaukee, Wisconsin
August 27, 2018

EXHIBIT 24
POWER OF ATTORNEY

The undersigned directors of Twin Disc, Incorporated hereby severally constitute John H. Batten and Jeffrey S. Knutson, and each of them singly, true and lawful attorneys with full power to them, and each of them, singly, to sign for us and in our names as directors the Form 10-K Annual Report for the fiscal year ended June 30, 2018 pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, and generally do all such things in our names and behalf as directors to enable Twin Disc, Incorporated to comply with the provisions of the Securities and Exchange Act of 1934 and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures so they may be signed by our attorneys, or either of them, as set forth below.

/s/ MICHAEL DOAR
Michael Doar, Director

/s/ JANET P. GIESSELMAN
Janet P. Giesselman, Director

/s/ DAVID W. JOHNSON
David W. Johnson, Director

August 2, 2018

/s/ DAVID B. RAYBURN
David B. Rayburn, Director

/s/ HAROLD M. STRATTON II
Harold M. Stratton II, Director

/s/ DAVID R. ZIMMER
David R. Zimmer, Director

EXHIBIT 31A
CERTIFICATIONS

I, John H. Batten, certify that:

1. I have reviewed this annual report on Form 10-K of Twin Disc, 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 officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: August 27, 2018

By: /s/ JOHN H. BATTEN
John H. Batten
President, Chief Executive Officer

EXHIBIT 31B
CERTIFICATIONS

I, Jeffrey S. Knutson, certify that:

1. I have reviewed this annual report on Form 10-K of Twin Disc, 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 officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: August 27, 2018

/s/ JEFFREY S. KNUTSON
Jeffrey S. Knutson
Vice President – Finance, Chief Financial Officer,
Treasurer and Secretary

EXHIBIT 32A

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 of Twin Disc, Incorporated (the "Company") on Form 10-K for the fiscal year ending June 30, 2018, as filed with the Securities and Exchange Commission as of the date hereof (the "Report"), I, John H. Batten, President, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1) the Report fully complies with Section 13(a) of the Securities Exchange Act of 1934, and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 27, 2018

By: /s/ JOHN H. BATTEN
John H. Batten
President, Chief Executive Officer

EXHIBIT 32B

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 of Twin Disc, Incorporated (the "Company") on Form 10-K for the fiscal year ending June 30, 2018, as filed with the Securities and Exchange Commission as of the date hereof (the "Report"), I, Jeffrey S. Knutson, Vice President – Finance, Chief Financial Officer, Treasurer and Secretary of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1) the Report fully complies with Section 13(a) of the Securities Exchange Act of 1934, and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 27, 2018

By: /s/ JEFFREY S. KNUTSON
Jeffrey S. Knutson
Vice President – Finance, Chief Financial Officer,
Treasurer and Secretary

CORPORATE DATA

ANNUAL MEETING
Twin Disc Corporate Offices
Racine, Wisconsin
2:00 P.M.
October 25, 2018

SHARES TRADED
NASDAQ: Symbol TWIN

ANNUAL REPORT ON SECURITIES AND EXCHANGE COMMISSION FORM 10-K
Single copies of the Company's 2018 Annual Report on Securities and Exchange Commission Form 10-K, including exhibits, will be provided without charge to shareholders after September 13, 2018, upon written request directed to Secretary, Twin Disc, Incorporated, 1328 Racine Street, Racine, Wisconsin 53403.

TRANSFER AGENT & REGISTRAR
Computershare
250 Royall Street
Canton, Massachusetts 02021
Toll Free: 800-839-2614
Web: www.computershare.com/investor

INDEPENDENT ACCOUNTANTS
RSM US LLP
Milwaukee, Wisconsin

CORPORATE OFFICES
Twin Disc, Incorporated
Racine, Wisconsin 53403
Telephone: (262) 638-4000

WHOLLY-OWNED SUBSIDIARIES
Twin Disc International S.P.R.L.
Nivelles, Belgium
Twin Disc Srl
Decima, Italy
Rolla Sp Propellers SA
Novazzano, Switzerland
Twin Disc (Pacific) Pty. Ltd.
Brisbane, Queensland, Australia
Twin Disc (Far East) Ltd.
Singapore and Hong Kong
Twin Disc (Far East) Pte. Ltd.
Singapore
Mill Log Equipment Co., Inc.
Coburg, Oregon
Mill Log Wilson Equipment Ltd.
Burnaby, British Columbia
Twin Disc Japan
Saitama, Japan
Twin Disc Power Transmission Private, Ltd.
Chennai, India
Twin Disc Power Transmission (Shanghai) Co. Ltd.
Shanghai, China
Twin Disc Netherlands Holdings, B.V.
Papendrecht, Netherlands
Twin Disc NL Holding, B.V.
Papendrecht, Netherlands
Veth Propulsion Holding, B.V.
Papendrecht, Netherlands
Exploitatiemaatschappij Veth B.V.
Papendrecht, Netherlands
Veth Electra B.V.
Papendrecht, Netherlands
Veth Diesel B.V.
Papendrecht, Netherlands
Veth Propulsion B.V.
Papendrecht, Netherlands
Veth Thrusters B.V.
Papendrecht, Netherlands
Twin Disc European Distribution S.P.R.L
Nivelles, Belgium

PARTIALLY OWNED SUBSIDIARIES
Twin Disc Nico Co. Ltd.

MANUFACTURING FACILITIES
Racine, Wisconsin
Nivelles, Belgium
Decima, Italy
Novazzano, Switzerland
Limite sull'Arno, Italy
Papendrecht, Netherlands

SALES OFFICES
Domestic
Racine, Wisconsin
Coburg, Oregon
Kent, Washington
Foreign
Nivelles, Belgium
Brisbane, Australia
Perth, Australia
Gold Coast, Australia
Singapore
Decima, Italy
Limite sull'Arno, Italy
Novazzano, Switzerland
Edmonton, Canada
Burnaby, Canada
Chennai, India
Coimbatore, India
Saitama, Japan
Shanghai, China
Guangzhou, China

MANUFACTURING LICENSES
Hitachi-Nico Transmission Co., Ltd.
Tokyo, Japan

TWIN DISC BOARD OF DIRECTORS

DAVID B. RAYBURN
Chairman
Retired President and Chief Executive Officer
Modine Manufacturing Company
(A manufacturer of heat exchange equipment)
Racine, Wisconsin

JOHN H. BATTEN
President, Chief Executive Officer
Twin Disc, Inc.
Racine, Wisconsin

MICHAEL DOAR
Chairman and Chief Executive Officer
Hurco Companies, Inc.
(A global manufacturer of machine tools)
Indianapolis, Indiana

JANET P. GIESSELMAN
Retired President and General Manager
Dow Oil & Gas Company
(A business unit of Dow Chemical Company)
Midland, Michigan

DAVID W. JOHNSON
Chief Financial Officer
Johnson Outdoors, Inc.
(A global provider of outdoor recreation products)
Racine, Wisconsin

HAROLD M. STRATTON II
Chairman of the Board and retired Chief Executive Officer
Strattec Security Corporation
(A manufacturer of security and access control products for the global automotive industry)
Milwaukee, Wisconsin

DAVID R. ZIMMER
Retired Managing Partner
Stonebridge Equity, LLC
(A merger, acquisition and finance value consulting firm)
Troy, Michigan

TWIN DISC OFFICERS

JOHN H. BATTEN
President, Chief Executive Officer

JEFFREY S. KNUTSON
Vice President – Finance, Chief Financial Officer, Treasurer and Secretary

MALCOLM F. MOORE
Executive Vice President, Chief Operating Officer

DEAN J. BRATEL
Vice President – Sales and Applied Technology

DENISE L. WILCOX
Vice President – Human Resources

MICHAEL B. GEE
Vice President – Engineering

DEBBIE A. LANGE
Corporate Controller

5-YEAR FINANCIAL SUMMARY

(In thousands, except where noted)	2018	2017	2016	2015	2014
STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)					
Net sales	$240,733	$168,182	$166,282	$265,790	$263,909
Costs and expenses, including marketing, engineering and administrative	225,804	177,160	190,878	250,304	255,022
Income (loss) from operations	14,929	(8,978)	(24,596)	15,486	8,887
Other income (expense)	(509)	(551)	(699)	414	(791)
Income (loss) before income taxes and noncontrolling interest	14,420	(9,529)	(25,295)	15,900	8,096
Income taxes	4,773	(3,414)	(12,282)	4,515	4,226
Noncontrolling interest	(119)	(179)	(91)	(212)	(226)
Net income (loss) attributable to Twin Disc	9,528	(6,294)	(13,104)	11,173	3,644
BALANCE SHEET					
Assets					
Cash	$ 15,171	$ 16,367	$ 18,273	$ 22,936	$ 24,757
Accounts receivable, net	45,422	31,392	25,363	43,883	40,219
Inventories	84,001	66,193	66,569	80,241	97,579
Other current assets	14,675	15,482	14,830	22,770	17,542
Total current assets	159,269	129,434	125,035	169,830	180,097
Goodwill and other assets	26,504	33,252	37,222	23,605	26,621
Property, plant and equipment, net	48,940	48,212	51,665	56,427	60,267
Total assets	234,713	210,898	213,922	249,862	266,985
Liabilities and Equity					
Current liabilities	$ 62,344	$ 44,523	$ 36,131	$ 57,054	$ 56,980
Long-term debt	4,824	6,323	8,501	10,231	14,800
Deferred liabilities	23,929	36,485	52,237	42,410	42,894
Total equity	142,997	122,921	116,490	139,528	151,584
Noncontrolling interest	619	646	563	639	727
Total liabilities and equity	234,713	210,898	213,922	249,862	266,985
Comparative Financial Information					
Per share statistics:					
Basic income (loss)	$ 0.82	$ (0.56)	$ (1.17)	$ 0.99	$ 0.32
Diluted income (loss)	0.82	(0.56)	(1.17)	0.99	0.32
Dividends	—	—	0.18	0.36	0.36
Total equity	12.66	10.94	10.40	12.38	13.46
Return on equity	6.7%	-5.1%	-11.2%	8.0%	2.4%
Return on assets	4.1%	-3.0%	-6.1%	4.5%	1.4%
Return on sales	4.0%	-3.7%	-7.9%	4.2%	1.4%
Average basic shares outstanding	11,294,914	11,239,474	11,202,752	11,273,697	11,258,342
Average diluted shares outstanding	11,395,072	11,239,474	11,202,752	11,277,364	11,264,421
Number of shareholder accounts	435	484	512	530	580
Number of employees	696	672	742	921	970
Additions to property, plant and equipment	$ 6,328	$ 3,133	$ 4,214	$ 9,049	$ 7,245
Depreciation	6,315	6,849	8,682	9,922	10,180
Net working capital	96,925	84,911	88,904	112,776	123,117



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