POSITIONED FOR POWER

TWIN DISC

2019 ANNUAL REPORT





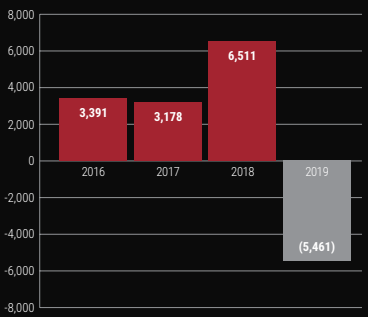
POSITIONED FOR TODAY – AND TOMORROW

Twin Disc has been putting horsepower to work since 1918. Today you can find our products in the drivelines and powertrains of a huge array of equipment – from tractors, trucks and turbines to work boats and pleasure craft. We continue to invent, engineer and produce superbly successful products, controls and systems, bringing customers and stakeholders all over the world a powerful future.

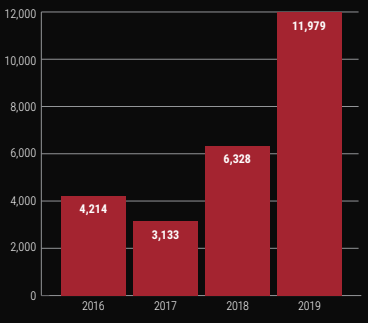
OPERATING RESULTS BY QUARTER	1ST QTR	2ND QTR	3RD QTR	4TH QTR	YEAR
2019					
Net sales	$ 74,689	$ 78,107	$ 77,420	$ 72,447	$ 302,663
Gross profit	23,985	26,088	23,117	16,451	89,641
Net income (loss)	2,862	4,073	4,560	(822)	10,673
Basic income (loss) per share	0.24	0.31	0.35	(0.06)	0.84
Diluted income (loss) per share	0.24	0.31	0.34	(0.06)	0.83
Dividends per share	–	–	–	–	–
Stock price range (high-low)	27.97-22.31	23.65-13.40	19.11-13.93	19.15-13.33	27.97-13.33
2018					
Net sales	$ 45,064	$ 56,546	$ 65,349	$ 73,774	$ 240,733
Gross profit	13,992	18,223	20,822	27,604	80,641
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

FINANCIAL HIGHLIGHTS	2017	2018	2019
Net sales	$ 168,182	$ 240,733	$ 302,663
Net income (loss)	(6,294)	9,528	10,673
Basic income (loss) per share	(0.56)	0.82	0.84
Diluted income (loss) per share	(0.56)	0.82	0.83
Dividends per share	–	–	–
Average basic shares outstanding	11,239,474	11,294,914	12,571,013
Average diluted shares outstanding	11,239,474	11,395,072	12,681,574

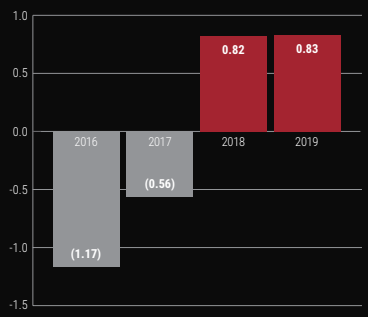
NET CASH PROVIDED BY OPERATING ACTIVITIES (in thousands)



CAPITAL EXPENDITURES
(in thousands)



DILUTED INCOME (LOSS) PER SHARE



TO OUR SHAREHOLDERS



"We've made meaningful progress on diversifying products and markets, enhancing capabilities and creating an agile, profit-focused platform."

JOHN BATTEN
Chief Executive Officer

Momentum from fiscal 2018 continued strong for Twin Disc in the first half of fiscal 2019. Although a slowdown in the oil and gas market affected the year's second half, we consider it a potent reminder of the value of our diversification strategy.



Members of the Twin Disc board of directors and management team visit Veth Propulsion in Papendrecht, Netherlands. Across Twin Disc, our people are at the heart of carrying out our strategy, enhancing operations and improving performance.

OIL AND GAS CONTINUES TO PLAY AN IMPORTANT ROLE IN OUR PORTFOLIO, and we're working hard to keep that business growing. At the same time, we're taking steps to ensure Twin Disc can prosper even when the oil and gas business is down.

Sales for the fiscal 2019 fourth quarter were $72,447,000, compared to $73,774,000 for the same period last year. The 1.8% decrease was primarily due to reduced demand from North American fracking customers for our 8500 series transmission systems, partially offset by stable global industrial and commercial marine markets, and the contribution of Veth Propulsion. For the fiscal 2019 full year, sales were $302,663,000, compared to $240,733,000 for fiscal 2018, an increase of 25.7%. Marine markets represented 48% of fiscal 2019's total sales, compared to 38% last fiscal year.

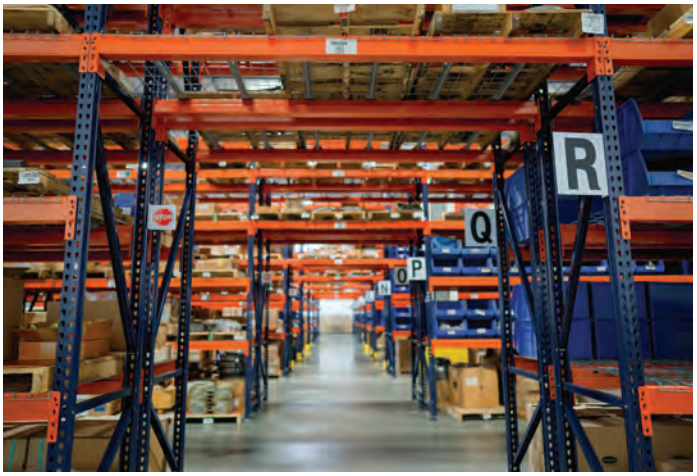
Gross profit percent for the fiscal 2019 fourth quarter was 22.7%, compared to 37.4% the preceding year. This decrease was primarily due to a less profitable mix of revenues: reduced new rig construction, less aftermarket demand in North American fracking, and volume shifting to lower-margin products. Margin was also affected when production demands required a move to higher-cost suppliers. For the fiscal 2019 full year, gross profit was 29.6%, compared to 33.5% for the fiscal 2018 full year.

Looking ahead, we're aggressively pursuing cost reduction and pricing initiatives to improve gross margin and overall profitability. I'm pleased with meaningful progress executing our long-term strategic plan, which focuses on diversifying our product, geographic and end market exposure; investing in our manufacturing and supply chain capabilities; and creating an agile, profit-focused platform.

THE MOST VISIBLE RESULT TO DATE OF OUR DIVERSIFICATION STRATEGY IS OUR 2018 ACQUISITION OF VETH PROPULSION, a global supplier of main and auxiliary marine propulsion products, headquartered in the Netherlands. More than twice the size of any previous Twin Disc acquisition, Veth represents $50 million of business in a field unrelated to oil and gas. Our first full year has seen significant new U.S. orders as well as opportunities to build on Veth's progressive products and design innovations—a fantastic start to benefits we expect to extend for generations.

Following the acquisition, Twin Disc announced our first-ever equity offering and raised $32 million, with net proceeds going to pay down debt, free up working capital and potentially fund future growth opportunities. This proactive move helped keep our balance sheet strong and provided a financial foundation to modernize processes, improve productivity and quality, and better serve our customers with on-time delivery. This work continues and should show measurable results in 2020.

TWO NEW FACILITIES DEMONSTRATE HOW WE'RE POSITIONING TWIN DISC FOR GROWTH. In May we opened our 39,000-square-foot North American Aftermarket Distribution Center, just six miles from our Global Manufacturing Headquarters. It's a much-needed hub for stocking and shipping spare parts; the Racine facility had been bursting at the seams. This new facility triples our capacity, includes dedicated aftermarket resources, and uses lean strategies to create exceptional value for Twin Disc customers. Its location adjacent to the I-94 corridor between Milwaukee and Chicago enhances shipping



Our Wisconsin-based North American Aftermarket Distribution Center opened in May 2019, tripling capacity to stock and ship Genuine Renewal Parts. The state-of-the-art facility uses storage racking and advanced equipment including a vertical lift module to streamline parts stocking and distribution. It's now running at peak performance.

flexibility, supporting our effort to offer customers shorter, more predictable lead times.

And in March we broke ground on a new operations facility in Lufkin, Texas, to manufacture power take-offs and clutches for heavy duty industrial equipment. Set to open in early 2020, this 50,000-square-foot facility gives Twin Disc the space to assemble our complete industrial product line and also connects us with a capable workforce. It will serve as a global distribution center, streamlining our supply chain while handling new products coming from European operations to the United States, and play a vital role in meeting growing demand.



For the first time since the 1950s, Twin Disc has expanded our footprint in North America, breaking ground for a new operations facility in Lufkin, Texas.

Moving these industrial and aftermarket operations has freed up 30 percent of our Racine space, a terrific opportunity to rethink layouts and to incorporate continuous improvement principles. I want to be clear that we remain committed to Southeastern Wisconsin and our local employees, even as we welcome the opportunity to grow further within the U.S. and North America.

Our strategy also emphasizes supply chain optimization, enhancing costs, quality and flexibility. This year we divested our last North American distribution operation, selling Mill Log Equipment Co., a Twin Disc subsidiary for more than 30 years, to Palmer Johnson Power Systems, a longstanding Twin Disc distributor. The transition brings our customers a cohesive experience from the Midwest to the West Coast. Meanwhile, our organization can reallocate resources to develop and engineer new products.

You'll see stories about our innovative products elsewhere in this report, highlighting areas of primary focus. Twin Disc is determined to be the technology leader across our market segments, be it diesel, electric or hybrid. Veth gives us an edge here; their technologies can help us empower customers to meet regulatory requirements and energy efficiency goals.

FINALLY, A FEW NOTES ABOUT OUR PEOPLE. In May we welcomed Jim Feiertag back to Twin Disc as president and chief operating officer. Jim's leadership and knowledge of our company as well as our markets will be a significant asset. He replaces retiring COO Mac Moore. I want to thank Mac for his dedicated service and leadership through a very difficult and challenging time in Twin Disc's history and his perseverance to make the Veth acquisition a reality. We wish him well in much-deserved retirement. We also welcomed Chris Bridleman in November 2018 as vice president, global operations. He is responsible for our global manufacturing strategy, subsidiaries and supply chain, and we are excited to have him as part of the team.

THIS HAS BEEN AN EXCITING YEAR OF TRANSITION AT TWIN DISC. Thanks to our investors for your continuing support, and to our employees — an outstanding, flexible, intelligent workforce. With an emphasis on both innovation and efficiency, capturing opportunity while always improving, Twin Disc is truly positioned for power.

JOHN H. BATTEN
Chief Executive Officer

POSITIONED FOR GROWTH



THE TREND TOWARD HYBRID MARINE PROPULSION SYSTEMS continues to accelerate, particularly in Europe, as suppliers and operators see increasing benefits: reduced emissions for regulatory compliance, and fuel and maintenance savings for faster return on investment.

Twin Disc sees significant opportunity in this trend. Our acquisition of Veth Propulsion includes Veth's industry-leading technology and an industry-wide reputation for innovation and reliability. With expanded engineering capabilities, we're ready to meet growing demand for electric or electric and diesel-electric propulsion systems.

Our flexible solutions include serial hybrid propulsion, or full electric, and parallel hybrid, toggling between electric and diesel power to turn the shaft. Projects are already in the works in North America, Europe, Asia and Australia, with more on the horizon—shaping our marine product line as well as the future.

DUAL POWER SOURCE, MULTIPLE BENEFITS Twin Disc hybrid propulsion systems combine electric motors and diesel engines, enabling switching between the two or using both for a power boost. Electric operation, practical at low power and speed, cuts fuel use and emissions. Hybrid uses include vessels with long waits between jobs (tugboats, pilot boats); those regularly operating at slow speeds (patrol boats, survey vessels); and those whose low full-power requirements let them rely on less costly diesel plus power boosts.



MGX-5321DC with MC-75



Twin Disc Joystick

SMOOTH RETROFIT, SMOOTHER CRUISING The MGX5075A QuickShift® transmission system, integrating transmission, valves, actuators and controls for precision boat handling, is the heart of this intricate Fleming 55 motoryacht retrofit. The stars are our Express Joystick System®, delivering fingertip push-twist-go maneuvering, and Express Positioning®, maintaining position at the touch of a button. BP300 hydraulic bow and stern thrusters, with a custom-fit oil tank, replaced electric bow thrusters — all seamlessly integrated into original Fleming onboard systems and controls.

POSITIONED FOR EASE

A BERTHING CHALLENGE involving high wind, heavy current and an electric bow thruster that quit at a crucial moment led Bill and Elaine Ebsary to Twin Disc for the first-ever retrofit of the Express Joystick System® (EJS®) in a Fleming 55 motoryacht.

The couple have been boating for years, with Bill an offshore competitive ocean racing sailor and a 50-year-plus member of the Royal Prince Alfred Yacht Club on Pittwater, just north of Sydney, Australia.

"As we get older, and with a boat as big — and comfortable! — as the Fleming 55, we need systems that let us manage the boat confidently, without crew or deckhands," says Bill. He says the smooth operation and micrometer accuracy of the EJS® eliminate stress.

And as an engineer, he's impressed with how the QuickShift® transmission applies the drive loads. "The Express Positioning® is a bonus," he adds. "To be able to integrate QuickShift® benefits and controls with the bow and stern thrusters to maintain a GPS-accurate position — that's technology applied at its best."

POSITIONED FOR SERVICE



SOME 500,000 RESIDENTS AND TOURISTS a year depend on Les Bateaux Verts for shuttle service around the bay of Saint-Tropez. Thanks to collaboration across Twin Disc enterprises, the historic fleet's newest vessel delivers that service with increased ease and efficiency.

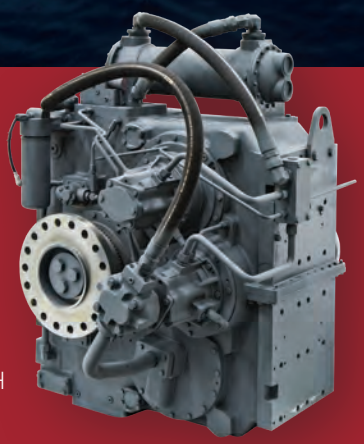
In two years of planning for the Gipsy XXI, Twin Disc, Esco Transmissions and TMML recommended that Les Bateaux Verts try our Express Joystick System® (EJS®) with hydraulic thrusters, and include additional Twin Disc components (see below).

The result is a vessel so easy to maneuver, even in high winds, that the Gipsy XXI saves nearly three hours a day in mooring time.

"I am not a man of the sea; I am a businessman," says Denis Robert, president of Les Bateaux Verts. And he appreciates the value Twin Disc provides. "We were able to combine technological performance and a good experience for our crews with comfort for our passengers," he says. As for the EJS®, after a year of operation, "we are convinced that it is the future."

ALL HANDS ON DECK Every Twin Disc marine subsidiary supplied products for the newest vessel in the "green boats" fleet, meeting ISO 9001 and 14001 certification requirements for quality, safety and sustainability. The Gipsy XXI, designed by Mer & Design and built by Chantier Martinez, includes:

- MGX marine gears from Belgium
- Express Joystick System® and electronic controls from the U.S.
- Hydraulic bow and stern thrusters from Italy
- Propeller shafts, rudders and steering system from Italy
- Custom Rolla propellers from Switzerland



MGX-61500SC-H

HP1200



A LINEUP WITH SERIOUS POWER When customers need a disconnect between the driven equipment and the prime mover, Twin Disc is ready with a full line of self-adjusting hydraulic PTOs, pump drives, gearboxes and mechanical PTOs. Our PTOs support maximum side loads for increased efficiency and decreased vibration, yet take up little space thanks to a compact design. The result: heavy-duty productivity in the desired range, continuing the Twin Disc tradition of manufacturing excellence.

WITH THE INTRODUCTION of our new family of hydraulically actuated wet and dry clutch PTOs, Twin Disc extends our renowned industrial lineup.

Advanced control systems enable smooth engagement, and remote actuation increases safety, comfort and convenience. Among the many applications are crushers, grinders, mulchers, dredgers, driving pumps and heavy-duty drills.

This full product mix provides value to new and existing customers. Our ability to offer integrated systems makes it easier and more cost-effective to specify Twin Disc — and our reputation for custom-engineered reliability and service makes it attractive.



POSITIONED FOR FLEXIBILITY

POSITIONED FOR RELIABILITY



WHEN CHINA'S CNPC WEST DRILLING, one of the region's top oil and gas businesses, needed a more reliable fracturing rig, they turned to Twin Disc. Our TA90-7600 transmission systems are designed specifically for pressure-pumping rigs for oil and gas well stimulation.

The unique Twin Disc system eliminates the torque converter, for design simplicity while still allowing full range-to-range power shifts with no throttle dipping. CNPC came to prefer this approach when initial use showed the system delivers long hours of high performance in challenging conditions.

"This model has been in field fracturing operation for more than 500 hours," says CNPC's Yan Zhiyong, leader of the field fracturing team. "It shows consistently good, smooth performance."

Additional advantages include gear ratios that create a better flow rate, maintaining pressure and thereby increasing production. Closely spaced gear ratios maintain more consistent pump flow rate, optimizing engine performance. Smooth shifting minimizes shock to the whole drive train, extending time between overhauls — and living up to CNPC's expectations that the firm can count on Twin Disc.

SIMPLE DESIGN, ROBUST PERFORMANCE Designed to match the engine life on pressure-pumping rigs that stimulate oil and gas production, the TA90-7600 transmission unites a deceptively simple countershaft design with heavy-duty clutch assemblies for durability and robust performance. And the compact size lets it fit between the frame rails of mobile equipment.



TA90-7600

TD61-1179



SUPERIOR FUNCTION, MORE EFFICIENT FIREFIGHTING Airport rescue and firefighting (ARFF) vehicles get to the location faster and start pumping sooner with the TD61-1179 ARFF transmission and remote mounted torque converter. Our advanced electronic controls enable faster shifts, rapid acceleration and precise speed control to handle varying ground conditions and tractive requirements. Seamlessly integrated control of drive mode and pump-and-roll mode frees emergency responders to focus on their primary mission.

THE WORLD'S LEADING PRODUCER of internationally certified fire safety solutions, NAFFCO, sought a foothold in a new segment: airport rescue and firefighting (ARFF) vehicles. And one of the first components they chose was our TD61-1179 transmission for ARFF vehicles.

"Twin Disc is the only transmission/torque converter pair in the world that maintains constant pump performance regardless of vehicle speed," says Yasin Kassab, manager, NAFFCO chassis assembly. This pump-and-roll functionality lets the vehicle drive slowly while directing full power to the firefighting pump.

Twin Disc modified PTOs and flanges to meet NAFFCO needs, simplifying vehicle configuration. "Twin Disc also provided good technical support for the complete unit's shift development and performance testing," Yasin says.

Our global service network is also key. The vehicles NAFFCO assembles at its Dubai, UAE headquarters are shipped all over the world, from Iceland to Mozambique. Teaming with Twin Disc, NAFFCO can advance its mission – the "Passion to Protect."



POSITIONED FOR INNOVATION

CORPORATE DATA, BOARD OF DIRECTORS AND OFFICERS

CORPORATE DATA

ANNUAL MEETING
Twin Disc Corporate Offices
Racine, Wisconsin
2:00 P.M., October 31, 2019

SHARES TRADED
NASDAQ: Symbol TWIN

ANNUAL REPORT ON SECURITIES AND EXCHANGE COMMISSION FORM 10-K
Single copies of the Company's 2019 Annual Report on Securities and Exchange Commission Form 10-K, including exhibits, will be provided without charge to shareholders after September 12, 2019, upon written request directed to Secretary, Twin Disc, Incorporated, 1328 Racine Street, Racine, Wisconsin 53403.

TRANSFER AGENT AND REGISTRAR
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250 Royall Street
Canton, Massachusetts 02021
Toll-free: 800-839-2614
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
- Twin Disc (Far East) Pte. Ltd.
  Singapore
- Twin Disc Japan
  Saitama, Japan
- Twin Disc Power Transmission Private, Ltd.
  Chennai, India
- Twin Disc (Far East) Pte. Ltd.
  India Branch
- Twin Disc Power Transmission (Shanghai) Co. Ltd.
  Shanghai, China
- Twin Disc NL Holding B.V.
  Papendrecht, Netherlands
- Veth Propulsion Holding B.V.
  Papendrecht, Netherlands
- Veth Propulsion 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

Foreign
Nivelles, Belgium
Brisbane, Australia
Perth, Australia
Gold Coast, Australia
Singapore
Decima, Italy
Limite sull'Arno, Italy
Novazzano, Switzerland
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
Racine, Wisconsin
- *A manufacturer of heat exchange equipment*

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

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

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

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

MICHAEL C. SMILEY
Former Chief Financial Officer
Zebra Technologies Corporation
Lincolnshire, Illinois
- *A global provider of asset management solutions*

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

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

TWIN DISC OFFICERS

JOHN H. BATTEN
Chief Executive Officer

JAMES E. FEIERTAG
President and Chief Operating Officer

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

DEAN J. BRATEL
Vice President – Sales and Applied Technology

CHRISTOPHER D. BRIDLEMAN
Vice President - Global Operations

MICHAEL B. GEE
Vice President – Engineering

DEBBIE A. LANGE
Corporate Controller

DENISE L. WILCOX
Vice President – Human Resources

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, 2019
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	Trading Symbol(s)	Name of each exchange on which registered
Common Stock (No Par Value)	**TWIN**	**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 every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files) YES [√] NO [ ]

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

Large Accelerated Filer [ ] Accelerated Filer [√] Non-accelerated Filer [ ] Smaller reporting company [√] Emerging growth company [ ]

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). YES [ ] NO [√]

At December 28, 2018, 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 $152,303,678. 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 22, 2019, the registrant had 13,332,485 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 31, 2019, 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, 2019

PART I Page

Item 1. Business 15
Item 1A. Risk Factors 16
Item 1B. Unresolved Staff Comments 19
Item 2. Properties 19
Item 3. Legal Proceedings 19
Item 4. Mine Safety Disclosure 19
Information About Our Executive Officers 20

PART II

Item 5. Market for the Registrant's Common Stock, Related Stockholder Matters and Issuer Purchases of Equity Securities 21
Item 6. Selected Financial Data 22
Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations 22
Item 7A. Quantitative and Qualitative Disclosure About Market Risk 29
Item 8. Financial Statements and Supplementary Data 29
Item 9. Change In and Disagreements With Accountants on Accounting and Financial Disclosure 29
Item 9A. Controls and Procedures 29
Item 9B. Other Information 30

PART III

Item 10. Directors, Executive Officers and Corporate Governance 30
Item 11. Executive Compensation 31
Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters 31
Item 13. Certain Relationships and Related Transactions, Director Independence 31
Item 14. Principal Accounting Fees and Services 31

PART IV

Item 15 Exhibits, Financial Statement Schedules 32
Exhibit Index 72
Signatures 75

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, azimuth drives, 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 pleasure craft, commercial 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.

On July 2, 2018, the Company completed the acquisition of 100% of the outstanding common stock of Veth Propulsion. Veth Propulsion is a global manufacturer of highly-engineered primary and auxiliary propulsions and propulsion machinery for maritime vessels, including rudder propellers, bow thrusters, generator sets and engine service and repair, based in the Netherlands. These products are complementary to and expand the Company's current product offerings in the marine and propulsion markets.

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 49% and 57% of the Company's consolidated net sales during the years ended June 30, 2019 and June 30, 2018, respectively. There were no customers that accounted for 10% of consolidated net sales in fiscal 2019.

Unfilled open orders for the next six months of $99.6 million at June 30, 2019 compares to $115.0 million at June 30, 2018. 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 $2.4 million and $1.6 million in fiscal 2019 and 2018, respectively. Total engineering and development costs were $12.6 million and $9.9 million in fiscal 2019 and 2018, 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, 2019 was 873.

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, 2019 and 2018 appears in Note L, Business Segments and Foreign Operations, 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. The SEC maintains an internet site (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers, such as the Company, that file electronically with the SEC. 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. In response to such actions, certain countries have imposed retaliatory actions against the United States. The Company anticipates that additional tariffs or trade restrictions resulting from "trade wars" 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. 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 were no customers that accounted for 10% or more of consolidated net sales in fiscal 2019, 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 56% of the Company's consolidated net sales for fiscal 2019. 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, and India. 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 2019 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, 2019, the Company had a borrowing capacity that exceeded its outstanding loan balance (see Note I, Debt, 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 2020 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 integration of Veth Propulsion into the Company's business processes is ongoing. While the integration is currently proceeding as planned, the Company has made certain longer term assumptions relating to the forecast level of synergies and associated costs of the acquisition of Veth Propulsion that may be inaccurate based on the information that was 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 recorded a significant amount of goodwill and other intangible assets, but it may never fully realize the full value of these assets. The accounting for the acquisition, including the purchase price allocation has been completed. The Company recorded 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 goodwill in the amount of $26.0 million as of June 30, 2019, of which $23.4 million is newly-acquired from the Veth Propulsion acquisition this year. In fiscal 2017 and 2016, when the Company's markets were significantly adversely affected by the global oil and gas decline, it recorded significant impairment charges related to two of its prior acquisitions. Any deterioration in the industries or businesses of the Company 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:

- 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.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

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 31, 2019.

Name	Age	Position
John H. Batten	54	Chief Executive Officer
James E. Feiertag	62	President, Chief Operating Officer
Jeffrey S. Knutson	54	Vice President – Finance, Chief Financial Officer, Treasurer and Secretary
Dean J. Bratel	55	Vice President – Sales and Applied Technology
Christopher D. Bridleman	41	Vice President – Global Operations
Michael B. Gee	52	Vice President – Engineering
Debbie A. Lange	61	Corporate Controller
Denise L. Wilcox	62	Vice President – Human Resources

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, Chief Executive Officer. Effective May 2019, Mr. Batten was named Chief Executive Officer. Prior to that, Mr. Batten served as President and Chief Executive Officer since July 2013, President and Chief Operations Officer since July 2008, Executive Vice President since October 2004, Vice President and General Manager – Marine Products since October 2001 and Commercial Manager – Marine since 1998. Mr. Batten joined Twin Disc in 1996 as an Application Engineer.

James E. Feiertag, President, Chief Operating Officer. Mr. Feiertag was appointed to President and Chief Operating Officer effective May 1, 2019. Since 2014, Mr. Feiertag served as President and CEO of Bemis Manufacturing Company. Prior to that, Mr. Feiertag was employed at Twin Disc for fourteen years and held various roles, including Vice President - Manufacturing, and, most recently, Executive Vice President. Prior to joining Twin Disc, Mr. Feiertag was the Vice President of Manufacturing for the Drives and Systems Group of Rockwell Automation since 1999.

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).

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.

Christopher D. Bridleman, Vice President – Global Operations. Mr. Bridleman was named as Vice President – Global Operations effective November 12, 2018. Prior to joining the Company, Mr. Bridleman was Vice President, Operations of REV Group, Inc., a leading designer, manufacturer and distributor of specialty vehicles and related aftermarket parts and services, since May 2016. Prior to that, he was Vice President Operations at Double E Company, a multi-national manufacturing/engineering company that produces and sells high quality mechanical/electrical/industrial web handling products to the paper, film and foil industries, since January 2015. From December 2007 through December 2014, he had various roles at Rexnord Corporation, the most recent of which was Director of Operations from April through December 2014.

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.

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.

PART II

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

The Company's common stock is traded on the NASDAQ Global Select Market under the symbol TWIN.

For information regarding the Company's equity-based compensation plans, see the discussion under Item 12 of this report. As of August 22, 2019, shareholders of record numbered 415.

Recent Sales of Unregistered Securities

On May 13, 2019, the Company issued 139,347 shares of its common stock, valued at $1,991 ($14.29 per share), to settle its earn-out obligation under the June 13, 2018 Share Purchase Agreement entered into by Twin Disc NL Holding B.V., a wholly-owned subsidiary of the Company, with Het Komt Vast Goed B.V., the prior parent of Veth Propulsion Holding B.V. The shares were issued pursuant to Section 4(a)(2) of the Securities Act of 1933, as amended, as the Share Purchase Agreement was a privately negotiated transaction that involved substantial due diligence on the part of all parties, and the shares were issued to three entities related to Het Komt Vast Goed B.V.

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 30, 2019 – April 26, 2019	0	NA	0	315,000
April 27, 2019 – May 31, 2019	0	NA	0	315,000
June 1, 2019 - June 30, 2019	5,302	NA	0	315,000
Total	**5,302**	**NA**	**0**	**315,000**

The amounts shown in Column (a) above represent shares of common stock delivered to the Company as payment of withholding taxes due on the vesting of restricted stock and performance share awards issued under the Twin Disc, Incorporated 2010 Long-Term Incentive Compensation Plan.

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 2018 and 2019. As of June 30, 2019, 315,000 shares remain authorized for purchase.

ITEM 6. SELECTED FINANCIAL DATA

Financial Highlights (in thousands, except per share amounts)

	Fiscal Years Ended June 30,				
Statement of Operations Data	2019	2018	2017	2016	2015
Net sales	$ 302,663	$ 240,733	$ 168,182	$ 166,282	$ 265,790
Net income (loss)	10,796	9,647	(6,115)	(13,013)	11,385
Net income (loss) attributable to Twin Disc	10,673	9,528	(6,294)	(13,104)	11,173
Basic income (loss) per share attributable to Twin Disc common shareholders	0.84	0.82	(0.56)	(1.17)	0.99
Diluted income (loss) per share attributable to Twin Disc common shareholders	0.83	0.82	(0.56)	(1.17)	0.99
Dividends per share	–	–	–	0.18	0.36

	June 30				
Balance Sheet Data	2019	2018	2017	2016	2015
Total assets	$ 346,870	$ 241,240	$ 210,898	$ 213,922	$ 249,862
Total long-term debt	42,491	4,824	6,323	8,501	10,231

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.

Special Note Regarding Smaller Reporting Company Status

In June 2018, the SEC issued Release 33-10513; 34-83550, Amendments to Smaller Reporting Company Definition, which changed the definition of a smaller reporting company in Rule 12b-2 of the Securities Exchange Act of 1934, as amended. Under this release, the new thresholds for qualifying are (1) public float of less than $250 million or (2) annual revenue of less than $100 million and public float of less than $700 million (including no public float). The rule change was effective on September 10, 2018, the Company's first fiscal quarter of fiscal year 2019. The Company continues to qualify as a smaller reporting company based on its public float as of the last business day of its second fiscal quarter of fiscal year 2019. A smaller reporting company may choose to comply with scaled or non-scaled financial and non-financial disclosure requirements on an item-by-item basis. The Company has scaled some of its disclosures of financial and non-financial information in this annual report. The Company may determine to provide scaled disclosures of financial or non-financial information in future quarterly reports, annual reports and/or proxy statements if it remains a smaller reporting company under SEC rules.

Results of Operations (in thousands)	2019	% of Sales	2018	% of Sales
Net sales	$ 302,663		$ 240,733	
Cost of goods sold	213,022		160,092	
Gross profit	89,641	29.6	80,641	33.5
Marketing, engineering and administrative expenses	71,541	23.6	61,095	25.4
Restructuring expenses	1,179	0.4	3,398	1.4
Other operating income	(1,577)	(0.5)	–	–
Income from operations	$ 18,498	6.1	$ 16,148	6.7

Fiscal 2019 Compared to Fiscal 2018

Net Sales

Net sales for fiscal 2019 increased 25.7%, or $61.9 million, to $302.7 million from $240.7 million in fiscal 2018. The Veth Propulsion acquisition, which closed on July 2, 2018, was the primary contributor to this increase, accounting for $54.9 million of the improvement. Sales of the Company's oil and gas related transmission products explain most of the remaining positive variance, as strong demand that began in late fiscal 2017 continued through much of fiscal 2019. While demand for oil and gas related products weakened in the fiscal fourth quarter, the Company is experiencing positive trends in many 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 $5.1 million unfavorable impact on fiscal 2019 sales.

Sales at our manufacturing segment increased 29.6%, or $64.0 million, versus the same period last year. The largest contributor to this increase was the impact of the Veth Propulsion acquisition, as noted above, which contributed $54.9 million of additional revenue in fiscal 2019. The Company's North American manufacturing operation experienced a 9.5% increase in sales compared to fiscal 2018. The primary driver for this increase was improved demand for the Company's oil and gas related products, primarily new and replacement units, through the first half of the fiscal year. This operation also saw improving demand for its airport rescue and fire fighting ("ARFF") transmission throughout the fiscal year. The Company's Italian manufacturing operations were essentially flat, experiencing a currency driven decline of 3.7%. The Company's Belgian manufacturing operation saw a 12.6% decrease in sales in fiscal 2019 on a significant currency impact (4.7%) and weaker demand in the marine markets served by this operation. The Company's Swiss manufacturing operation, which supplies customized propellers for the global mega yacht and patrol boat markets, experienced a 10.8% decrease in sales, primarily due to currency and timing of projects in the global pleasure craft and patrol boat markets.

Sales at our distribution segment were up 25.7%, or $21.8 million, compared to fiscal 2018. The Company's Asian distribution operation in Singapore, China and Japan experienced a 43.4% increase in sales due to a recovery in demand for the Company's oil and gas, commercial marine and patrol craft products in the region. The Company's distribution operation in the Northwest of the United States and Southwest of Canada experienced a decrease in sales of 42.3% primarily due to the sale of the Mill Log business in early March 2019. The Company's European distribution operation, a newly established entity in 2019 to distribute the Company's products in the European market, accounts for $12.8 million. 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 1.7%, driven by improved activity in the Australian pleasure craft market over the prior fiscal year, offset by a significant unfavorable currency impact (8.6%).

Net sales for the Company's marine and propulsion systems were up 55.2% compared to the prior fiscal year. This increase primarily reflects the impact of the Veth Propulsion acquisition. In the land-based transmission market, the year-over-year increase of 5.2% can be attributed primarily to increased shipments of the Company's pressure pumping transmission systems and components to the North American and Asian oil and gas market, along with improved shipments of the Company's ARFF transmission products. The increase experienced in the Company's industrial products of 10.2% was due to improving volume in agriculture, mining and general industrial markets, primarily in the North American and Italian regions. The Company is beginning to see the benefits of the new industrial products released over the past few years.

Geographically, sales to the U.S. and Canada declined 8% in fiscal 2019 compared to fiscal 2018, representing 47% of consolidated sales for fiscal 2019 compared to 64% in fiscal 2018. The reduction is primarily due to the reduced shipments of oil and gas related products into North America during the second half of fiscal 2019. Sales into China improved nearly 147% compared to fiscal 2018, driven by the combination of improving commercial marine activity and renewed oil and gas demand. Sales into China reached their highest level since fiscal 2014, representing 10% of 2019 consolidated net sales. Overall sales into the Asia Pacific market improved 58% compared to fiscal 2018 and represented approximately 18% of sales in fiscal 2019, compared to 15% in fiscal 2018. Sales into the European market improved approximately 112% from fiscal 2018 levels while accounting for 28% of consolidated net sales compared to 17% in fiscal 2018. The large increase is primarily the result of the Veth Propulsion acquisition, which has a high percentage of sales into the European market. See Note L, Business Segments and Foreign Operations, of the notes to the consolidated financial statements for more information on the Company's business segments and foreign operations.

Gross Profit

In fiscal 2019, gross profit increased $9.0 million, or 11.2%, to $89.6 million on a sales increase of $61.9 million. Gross profit as a percentage of sales decreased 390 basis points in fiscal 2019 to 29.6%, compared to 33.5% in fiscal 2018. The table below summarizes the gross profit trend by quarter for fiscal years 2019 and 2018:

Gross Profit ($ in millions)	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year
2019	$24.0	$26.1	$23.1	$16.4	$89.6
2018	$14.0	$18.2	$20.8	$27.6	$80.6

Percentage of Sales	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year
2019	32.1%	33.4%	29.9%	22.7%	29.6%
2018	31.0%	32.2%	31.9%	37.4%	33.5%

There were a number of factors that impacted the Company's overall gross profit rate in fiscal 2019. Gross profit for the year was primarily impacted by higher volumes, partially offset by a more challenging product mix. As the chart above shows, the product mix during the second half of fiscal 2019 was less profitable than the first half. This was driven by reduced sales of high-margin oil and gas transmissions and parts, along with increased sales of lower margin transmission units. Margin was also negatively impacted by a move to higher cost suppliers in order to meet production demands. In addition, there was purchase accounting inventory step-up to fair market value related to the Veth Propulsion acquisition that negatively impacted gross profit by $4.3 million in fiscal 2019. The Company estimates the net favorable impact of increased volumes on gross margin in fiscal 2019 was approximately $16.6 million. The unfavorable shift in product mix, primarily related to the reduced shipments of the Company's high margin oil and gas transmission units and aftermarket products, had an estimated unfavorable impact of $3.0 million.

Marketing, Engineering and Administrative (ME&A) Expenses

Marketing, engineering, and administrative (ME&A) expenses of $71.5 million were up $10.4 million, or 17.1%, compared to the prior fiscal year. As a percentage of sales, ME&A expenses decreased to 23.6% of sales versus 25.4% of sales in fiscal 2018. The increase in fiscal 2019 ME&A expenses compared to the prior year was driven by the addition of Veth Propulsion expenses ($11.4 million), growth-related salary and travel expense ($0.9 million), increased marketing expenses ($0.8 million), higher stock-based compensation expense ($0.8 million) and other inflation and growth-related increases ($2.2 million). These increases were partially offset by reduced global bonus expense ($3.6 million), the elimination of Mill Log spending due to its divestiture in the third quarter ($1.1 million) and a foreign currency impact ($1.0 million).

Restructuring of Operations and Other Operating Income

During the course of fiscal 2019, the Company executed a series of targeted restructuring activities, resulting in a pre-tax restructuring charge of $1.2 million, or $0.09 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.

During the course of fiscal 2019, as part of its ongoing initiative to focus resources on core manufacturing and product development activities, the Company completed the divestiture of its distribution entities in in the northwestern U.S. and western Canada territories (the "Mill Log business"). The Company received a total consideration of $7.7 million, consisting of cash of $5.2 million and a note receivable of $2.5 million from the buyer, who is a major distributor customer of the Company, in exchange for substantially all the assets and intangible rights of the Mill Log business, including distribution rights over the territory. The Company recognized a pre-tax gain on the sale of this business of $0.8 million.

During the course of fiscal 2019, the contingent consideration related to the Veth Propulsion acquisition (see Note B, Acquisition of Veth Propulsion Holding B.V.) was settled through the issuance of 139,347 shares of Company common stock. The fair value of the shares of stock at settlement was lower than the fair value at which it was initially determined at opening balance sheet date. Under ASC 805, Business Combinations, any change in fair value of the contingent consideration is recognized in the current period income statement and is not an adjustment to the opening balance sheet or the determination of goodwill. Accordingly, the Company recognized a pre-tax gain of $0.8 million.

Interest Expense

Interest expense of $1.9 million for fiscal 2019 was significantly higher than the prior year total of $0.3 million due to the additional borrowings required for the Veth Propulsion acquisition, which closed on July 2, 2018. The Company had an average term loan balance of $17.9 million in fiscal 2019, with an interest rate that ranged from 3.81% to 5.51%. The average borrowing on the revolver, computed monthly, increased to $32.1 million in fiscal 2019, compared to $7.3 million in the prior fiscal year. The interest rate on the revolver was a range of 2.98% to 4.25% in the prior fiscal year compared to a range of 1.25% to 4.75% in the current year.

Other Income (Expense), Net and Interest Income

In fiscal 2019, other expense, net, increased $0.6 million primarily due to the impact of currency movements related to the euro.

Income Taxes

The effective tax rate for the twelve months of fiscal 2019 was 25.6%, which was lower than the prior year rate of 33.1%. The lower fiscal 2019 rate was primarily the result of the full year impact of impact of the Tax Cuts and Jobs Act (the "Tax Act"), which was enacted in the middle of the Company's prior fiscal year. The prior year was also 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 second quarter of the prior fiscal year, in compliance with the Tax 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, carry-back and carry-forward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset. 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, 2019, the Company's backlog of orders scheduled for shipment during the next six months (six-month backlog) was $99.6 million, or approximately 13% lower than the six-month backlog of $115.0 million as of June 30, 2018. The reduced backlog is primarily attributable to a lower level of North American oil and gas transmission units on order, partially offset by the addition of the Veth Propulsion six month backlog.

Liquidity and Capital Resources

Fiscal Years 2019 and 2018

The net cash used by operating activities in fiscal 2019 totaled $5.5 million, a decline of $12.0 million from the prior fiscal year. While net income increased by $1.1 million from the prior year, this was more than offset by a $17.9 million increase in working capital, excluding the impact of the Veth Propulsion acquisition. The largest increase came in inventory ($22.2 million), as the Company ramped up to meet increasing demand for oil and gas related products. The movement of other components in working capital essentially offset, as reduced trade receivables (from lower fourth quarter sales) and reduced cash balance (from more aggressive global repatriation) were offset by lower trade payables (from reduced purchasing activity in the fourth quarter) and lower accruals (primarily bonus).

The acquisition of Veth Propulsion comprises $60.2 million of the total $66.9 million of cash used by investing activities. Spending on capital projects increased 89% to $12.0 million in fiscal 2019, as the Company accelerated investments in critical machine tools with improved technology to drive greater productivity, along with additional spending on new product development. This spending was partially offset by the proceeds from the sale of the Mill Log business during the third quarter of fiscal 2019 ($5.2 million).

In fiscal 2019, the net cash provided by financing activities is comprised of the proceeds from a follow-on public offering ($32.2 million) and net borrowings of long-term debt ($38.0 million). During fiscal 2019, 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.

Future Liquidity and Capital Resources

On June 29, 2018, the Company entered into 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 (the "2016 Credit Agreement") 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 $35.0 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, $50.0 million (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", as defined, and bear interest at the applicable rate per the Credit Agreement. This rate as of June 30, 2019 was 3.68%. In addition to the monthly interest

payments and any mandatory principal payments required by the Credit Agreement (if applicable), the Company is 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.

On March 4, 2019, the Company entered into a second amendment (the "Second Amendment") to the June 29, 2018 Credit Agreement. The Second Amendment reduces the principal amount of the term loan commitment under the Credit Agreement from $35.0 million to $20.0 million. In connection with the Second Amendment, the Company issued an amended and restated term note in the amount of $20.0 million to the Bank, which amended the original $35.0 million note provided under the Credit Agreement.

Prior to entering into the Second Amendment, the outstanding principal amount of the term loan (the "Term Loan") under the Credit Agreement was $10.8 million. On the date of the Second Amendment, the Bank made an additional advance on the Term Loan to the Company in the amount of $9.2 million. The Second Amendment also extended the maturity date of the Term Loan from January 2, 2020 to March 4, 2026, and added a requirement that the Company make principal installments of $0.5 million per quarter starting with the quarter ending June 30, 2019.

The Second Amendment also reduces the applicable margin for purposes of determining the interest rate applicable to the Term Loan. Previously, the applicable margin was 3.00%, which was added to the Monthly Reset LIBOR Rate or the Adjusted LIBOR, as applicable. Under the Second Amendment, the applicable margin is between 1.375% and 2.375%, depending on the Company's total funded debt to EBITDA ratio.

The Second Amendment also adjusts certain financial covenants made by the Company under the Credit Agreement. Specifically, the Company has covenanted (i) not to allow its total funded debt to EBITDA ratio to be greater than 3.00 to 1.00 (the cap had previously been 3.50 to 1.00 for quarters ending on or before September 30, 2019 and 3.25 to 1.00 for quarters ending on or about December 31, 2019 through September 30, 2020), and (ii) that its tangible net worth will not be less than $100.0 million plus 50% of net income for each fiscal year ending on and after June 30, 2019 for which net income is a positive number (the $100.0 million figure had previously been $70.0 million).

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. The Company has also pledged 100% of its equity interests in certain domestic subsidiaries and 65% of its equity interests in certain foreign subsidiaries. The Company also entered into a Collateral Assignment of Rights under Purchase Agreement for its acquisition of Veth Propulsion described in Note B, Acquisition of Veth Propulsion Holding B.V., to the consolidated financial statements. To effect these security interests, the Company entered into various amendment and assignment agreements that consent to the assignment of certain agreements previously entered into between the Company and the Bank of Montreal in connection with the 2016 Credit 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 the Company continues to have sufficient liquidity for near-term needs. The Company had approximately $24.7 million of available borrowings under the Credit Agreement as of June 30, 2019. 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, 2019, the Company also had cash of $12.4 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 2020, the Company expects to contribute $1.9 million to its defined benefit pension plans, the minimum contribution required.

Net working capital increased $32.4 million, or 33.4%, during fiscal 2019 and the current ratio (calculated as total current assets divided by total current liabilities) increased from 2.6 at June 30, 2018 to 2.8 at June 30, 2019. The increase in net working capital was primarily driven by the acquisition of Veth Propulsion in July 2018 and demand-related increases to inventory.

The Company expects capital expenditures to be approximately $12 million - $14 million in fiscal 2020. 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

The Company had no off-balance sheet arrangements as of June 30, 2019 and 2018.

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, Basis of Presentation and Significant Accounting Policies, of the notes 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 its customers and adjusts credit limits based on payment history and the customer's credit-worthiness as determined by review of current credit information. The Company continuously monitors collections and payments from its customers and maintains a provision for estimated credit losses based upon its 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 the Company's accounts receivable are dispersed among a large customer base, a significant change in the liquidity or financial position of any one of its largest customers could have a material adverse impact on the collectibility of its 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 the Company's 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, 2019, goodwill was not impaired and no impairment charge was necessary for fiscal 2019. See discussion in Note F, Goodwill and Other Intangibles, of 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 the Company's 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 the Company believes that 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, 2019 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-2018 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, carry-back and carry-forward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset.

Recently Issued Accounting Standards

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

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

The Company is electing not to provide this disclosure due to its status as a Smaller Reporting Company.

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)

2019	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year
Net sales	$ 74,689	$ 78,107	$ 77,420	$ 72,447	$ 302,663
Gross profit	23,985	26,088	23,117	16,451	89,641
Restructuring expenses	173	434	131	441	1,179
Net income (loss)	2,903	4,079	4,587	(773)	10,796
Net income (loss) attributable to Twin Disc	2,862	4,073	4,560	(822)	10,673
Basic income (loss) per share attributable to Twin Disc common shareholders	0.24	0.31	0.35	(0.06)	0.84
Diluted income (loss) per share attributable to Twin Disc common shareholders	0.24	0.31	0.34	(0.06)	0.83
Dividends per share	–	–	–	–	–

2018	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year
Net sales	$ 45,064	$ 56,546	$ 65,349	$ 73,774	$ 240,733
Gross profit	13,992	18,223	20,822	27,604	80,641
Restructuring expenses	1,218	831	452	897	3,398
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	–	–	–	–	–

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

None.

ITEM 9A. 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 its 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, the Company's management concluded that its internal control over financial reporting was effective as of June 30, 2019.

For purposes of evaluating the Company's internal control over financial reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Veth Propulsion Holding B.V. and Veth Propulsion B.V. (collectively "Veth Propulsion"), which the Company acquired on July 2, 2018, and which are included in the consolidated balance sheets of the Company as of June 30, 2019, and the related consolidated statements of operations and comprehensive income, cash flows, and changes in shareholders' equity, for the year then ended. Veth Propulsion constituted 28% of total assets as of June 30, 2019, and 18% and 7% of net sales and income from operations, respectively, for the year then ended.

RSM US LLP, an independent registered public accounting firm, has audited the Company's internal control over financial reporting as of June 30, 2019, as stated in their report which appears herein.

Changes in Internal Control Over Financial Reporting

During the fourth quarter of fiscal 2019, 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 9B. OTHER INFORMATION

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

For information with respect to the executive officers of the Registrant, see "Information About Our Executive Officers" 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 31, 2019, 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 31, 2019, 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 31, 2019, 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 31, 2019, 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 31, 2019, 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 31, 2019, which is incorporated into this report by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information set forth under the captions "Executive Compensation" and "Director Compensation" in the Proxy Statement for the Annual Meeting of Shareholders to be held on October 31, 2019, is incorporated into this report by reference.

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

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 31, 2019 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 31, 2019, 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 31, 2019, 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 31, 2019, 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 31, 2019 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	33
Consolidated Balance Sheets as of June 30, 2019 and 2018	35
Consolidated Statements of Operations and Comprehensive Income for the years ended June 30, 2019 and 2018	36
Consolidated Statements of Cash Flows for the years ended June 30, 2019 and 2018	37
Consolidated Statements of Changes in Equity for the years ended June 30, 2019 and 2018	38
Notes to Consolidated Financial Statements	39

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, 2019, 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, 2019, 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 29, 2019 expressed an unqualified opinion.

As described in Management's Report on Internal Control Over Financial Reporting in Item 9A. Controls and Procedures, management has excluded Veth Propulsion Holding B.V. and Veth Propulsion B.V. (collectively "Veth Propulsion") from its assessment of internal control over financial reporting as of June 30, 2019, because it was acquired by the Company in a purchase business combination in the first quarter of fiscal 2019. We have also excluded Veth Propulsion from our audit of internal control over financial reporting. Veth Propulsion is a wholly owned subsidiary whose total assets and net income represent approximately 28 percent and (17) percent, respectively, of the related consolidated financial statement amounts as of and for the year ended June 30, 2019.

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 29, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Twin Disc, Incorporated (the Company) as of June 30, 2019 and 2018, the related consolidated statements of operations and comprehensive income, changes in equity and cash flows for each of the two years in the period ended June 30, 2019, and the related notes to the consolidated financial statements and schedule (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, 2019 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended June 30, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of June 30, 2019, 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 29, 2019 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 audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

/s/ RSM US LLP

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

Milwaukee, Wisconsin
August 29, 2019

TWIN DISC, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

June 30, 2019 and 2018 (In thousands, except share amounts)

	2019	2018
Assets		
Current assets		
Cash	$ 12,362	$ 15,171
Accounts receivable, net	44,013	45,422
Inventories	125,893	84,001
Prepaid expenses	11,681	8,423
Other	8,420	6,252
Total current assets	202,369	159,269
Property, plant and equipment, net	71,258	55,467
Goodwill, net	25,954	2,692
Deferred income taxes	18,178	18,056
Intangible assets, net	25,353	1,906
Other assets	3,758	3,850
Total assets	$346,870	$241,240
Liabilities and Equity		
Current liabilities		
Short-term borrowings and current maturities of long-term debt	$ 2,000	$ –
Accounts payable	31,468	29,368
Accrued liabilities	39,609	32,976
Total current liabilities	73,077	62,344
Long-term debt	40,491	4,824
Lease obligation	14,683	6,527
Accrued retirement benefits	25,878	21,068
Deferred income taxes	7,429	1,203
Other long-term liabilities	2,494	1,658
Total liabilities	164,052	97,624
Commitments and Contingencies (Note Q)		
Twin Disc shareholders equity		
Preferred shares authorized: 200,000; issued: none; no par value	–	–
Common shares authorized: 30,000,000; issued: 14,632,802 and 13,099,468, respectively; no par value	45,047	11,570
Retained earnings	196,472	178,896
Accumulated other comprehensive loss	(37,971)	(23,792)
	203,548	166,674
Less treasury stock, at cost (1,392,524 and 1,545,783 shares, respectively)	21,332	23,677
Total Twin Disc shareholders' equity	182,216	142,997
Non controlling interest	602	619
Total equity	182,818	143,616
Total liabilities and equity	$346,870	$241,240

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

For the years ended June 30, 2019 and 2018 (In thousands, except per share amounts)

	2019	2018
Net sales	$ 302,663	$ 240,733
Cost of goods sold	213,022	160,092
Gross profit	89,641	80,641
Marketing, engineering and administrative expenses	71,541	61,095
Restructuring expenses	1,179	3,398
Other operating income	(1,577)	–
Income from operations	18,498	16,148
Other income (expense):		
Interest income	43	55
Interest expense	(1,927)	(282)
Other income (expense), net	(2,107)	(1,501)
	(3,991)	(1,728)
Income before income taxes and noncontrolling interest	14,507	14,420
Income tax expense	3,711	4,773
Net income	10,796	9,647
Less: Net earnings attributable to noncontrolling interest, net of tax	(123)	(119)
Net income attributable to Twin Disc	**$ 10,673**	**$ 9,528**
Income per share data:		
Basic income per share attributable to Twin Disc common shareholders	$ 0.84	$ 0.82
Diluted income per share attributable to Twin Disc common shareholders	$ 0.83	$ 0.82
Weighted average shares outstanding data:		
Basic shares outstanding	12,571	11,295
Dilutive stock awards	111	100
Diluted shares outstanding	**12,682**	**11,395**
Comprehensive income:		
Net income	$ 10,796	$ 9,647
Foreign currency translation adjustment	(2,671)	981
Benefit plan adjustments, net of income taxes of ($1,242) and $3,207, respectively	(4,121)	7,924
Unrealized loss on cash flow hedge, net of income taxes of $156 and $0	(509)	–
Comprehensive income	3,495	18,552
Less: Comprehensive income attributable to noncontrolling interest	(98)	(145)
Comprehensive income attributable to Twin Disc	**$ 3,397**	**$ 18,407**

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, 2019 and 2018 (In thousands)

	2019	2018
Cash flows from operating activities:		
Net income	$ 10,796	$ 9,647
Adjustments to reconcile net income to net cash (used) provided by operating activities		
Depreciation and amortization	9,335	6,464
Amortization of inventory fair value step-up	4,277	–
Stock compensation expense	2,591	2,062
Restructuring of operations	–	238
Gain on sale of Mill Log Business	(768)	–
Gain on contingent consideration of Veth Propulsion acquisition	(809)	–
Provision for deferred income taxes	6,846	3,004
Other, net	84	(63)
Changes in operating assets and liabilities		
Trade accounts receivable	11,177	(13,774)
Inventories	(27,671)	(17,460)
Other assets	(10,159)	1,537
Accounts payable	(1,013)	6,844
Accrued liabilities	(9,896)	10,096
Accrued/prepaid retirement benefits	(251)	(2,084)
Net cash (used) provided by operating activities	(5,461)	6,511
Cash flows from investing activities, net of acquired business:		
Capital expenditures	(11,979)	(6,328)
Acquisition of Veth Propulsion, less cash acquired	(60,195)	–
Proceeds from sale of plant assets	239	152
Proceeds from sale of Mill Log business (see Note R)	5,158	–
Proceeds from life insurance policy	101	–
Other, net	(233)	(128)
Net cash used by investing activities	(66,909)	(6,304)
Cash flows from financing activities:		
Proceeds from issuance of common stock, net	32,210	–
Borrowings under long-term debt agreement	44,480	–
Borrowings under revolving loan agreement	147,854	80,642
Repayments under revolving loan agreement	(129,548)	(82,143)
Repayments of long-term borrowings	(24,752)	–
Payments of withholding taxes on stock compensation	(1,005)	(422)
Dividends paid to noncontrolling interest	(115)	(172)
Proceeds from exercise of stock options	36	29
Net cash provided (used) by financing activities	69,160	(2,066)
Effect of exchange rate changes on cash	401	663
Net change in cash	(2,809)	(1,196)
Cash:		
Beginning of year	15,171	16,367
End of year	$ 12,362	$ 15,171
Supplemental cash flow information:		
Cash paid (received) during the year for:		
Interest	$ 1,906	$ 304
Income taxes	1,927	(7)

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, 2019 and 2018 (In thousands)

	Twin Disc, Inc. Shareholders' Equity					
	Common Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Non-Controlling Interest	Total Equity
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**
Net income		10,673			123	10,796
Translation adjustments			(2,646)		(25)	(2,671)
Benefit plan adjustments, net of tax			(4,121)			(4,121)
Unrealized loss on cash flow hedge, net of tax			(509)			(509)
Release stranded tax effects		6,903	(6,903)			–
Cash dividends					(115)	(115)
Compensation expense	2,591					2,591
Shares issued, net	30,886			2,345		33,231
Balance at June 30, 2019	**$ 45,047**	**$ 196,472**	**$ (37,971)**	**$ (21,332)**	**$ 602**	**$ 182,818**

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. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The consolidated financial statements and information included in this Annual Report on Form 10-K ("Form 10-K") include the financial results of Veth Propulsion Holding B.V. ("Veth Propulsion") for the period beginning July 2, 2018 through June 30, 2019. The financial results included in this Form 10-K related to the acquisition method accounting for the Veth Propulsion acquisition have been finalized. See Note B, Acquisition of Veth Propulsion Holding B.V., for further information about the acquisition and related transactions and the acquisition accounting.

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 ($681) and ($198) in fiscal 2019 and 2018, 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 $1,582 and $1,478 at June 30, 2019 and 2018, respectively. The Company records an allowance for doubtful accounts 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 its 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 defined in Note O, Pension and Other Postretirement Benefit Plans. 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, 2019. The Company's term loan borrowing, which is LIBOR-based, approximates fair value at June 30, 2019. 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.

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 derivative financial instruments to manage certain financial risks. The Company enters into forward contracts to reduce the earnings and cash flow impact of non-functional currency denominated receivables and payables. The Company uses interest rate swap contracts to reduce the exposure to variability in interest rates on floating debt borrowings. The Company designates certain financial instruments as cash flow hedges for accounting purposes. See Note T, Derivative Financial Instruments, for additional information.

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 during the Company's fourth fiscal quarter 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.

Goodwill impairment charges are recorded using a simplified 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.

In fiscal 2018 and prior years, the annual testing date was the last day of the fiscal year. In fiscal 2019, the Company changed its annual testing date to the first day of the Company's fourth fiscal quarter in order to provide the Company more time and better information to perform the analyses. The Company does not believe that this change constitutes a material change to the method in applying an accounting principle.

The Company conducted interim qualitative assessments throughout the year, and its annual assessment for goodwill impairment as of March 30, 2019 and June 30, 2018 using updated inputs, including appropriate risk-based, country and company specific weighted average discount rates for the Company's reporting units.

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, 2019 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 assets and liabilities for the expected future income tax consequences of events that have been recognized in the Company's financial statements. Under this method, deferred tax assets and liabilities 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 from contracts with customers is recognized using a five-step model consisting of the following: (1) identify the contract with a customer; (2) identify the performance obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligations in the contract; and (5) recognize revenue when (or as) the Company satisfies a performance obligation. Performance obligations are satisfied when the Company transfers control of a good or service to a customer, which can occur over time or at a point in time. The amount of revenue recognized is based on the consideration to which the Company expects to be entitled in exchange for those goods or services, including the expected value of variable consideration. The customer's ability and intent to pay the transaction price is assessed in determining whether a contract exists with the customer. If collectibility of substantially all of the consideration in a contract is not probable, consideration received is not recognized as revenue unless the consideration is nonrefundable and the Company no longer has an obligation to transfer additional goods or services to the customer or collectibility becomes probable.

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.

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 Adopted Accounting Standards

a. In May 2014, the Financial Accounting Standards Board ("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. The Company adopted this guidance effective July 1, 2018, using the modified retrospective method. Prior periods presented were not retrospectively adjusted for this change. The Company has applied the new revenue recognition standard only to contracts that were not completed as of July 1, 2018.

   The Company 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 entities in its marine and propulsion 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.

b. 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. The Company elected to early adopt the standard effective July 1, 2018 concurrent with the adoption of ASU 2014-09, Revenue from Contracts with Customers, using the modified retrospective approach at the beginning of the earliest comparative period presented in the financial statements, which required the Company to restate each prior reporting period presented.

   For operating leases in which the Company is a lessee, the Company concluded that all existing operating leases under the old guidance continue to be classified as operating leases under the new guidance, and all existing capital leases under the old guidance are classified as finance leases under the new guidance. The Company excluded any lease contracts with terms of twelve months or less as of the adoption date. The Company has lease agreements with lease and non-lease components, which are generally accounted for as separate lease components. The Company accounts for short-term leases on a straight-line basis over the lease term.

   The following table presents the effect of the adoption of ASU 2016-02 on the Company's condensed consolidated balance sheet as of June 30, 2018:

	June 30, 2018 As Reported	Adoption Impact	June 30, 2018 Restated
Property, plant and equipment, net	$ 48,940	$ 6,527	$ 55,467
Lease obligations	–	6,527	6,527

   The adoption of ASU 2014-09 and ASU 2016-02 did not have an impact on the Company's consolidated statement of operations and comprehensive income or consolidated statement of cash flows for the year ended June 30, 2018.

c. 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 cost 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 Company adopted this guidance effective July 1, 2018 on a retrospective basis, which resulted in the reclassification of certain amounts

from cost of goods sold and marketing, engineering and administrative expenses to other income (expense), net in the condensed consolidated statements of operations and comprehensive income. As a result, prior period amounts impacted have been revised accordingly. There was no impact to net income.

The following table presents the effect of the adoption of ASU 2017-07 on the Company's condensed consolidated statements of operations and comprehensive income for the year ended June 30, 2018:

	June 30, 2018 As Reported	Adoption Impact	June 30, 2018 Restated
Cost of goods sold	$ 160,497	$ (405)	$ 160,092
Gross profit	80,236	405	80,641
Marketing, engineering and administrative expenses	61,909	(814)	61,095
Income from operations	14,929	1,219	16,148
Other income (expenses), net	(282)	(1,219)	(1,501)

d. 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 Company elected to early adopt this guidance effective July 1, 2018 by making a reclassification of $6,903 from accumulated other comprehensive loss to retained earnings.

e. 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 Company adopted this guidance effective July 1, 2018. The adoption of this guidance did not have a material impact on the Company's financial statements and disclosures.

f. 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 Company adopted this guidance effective July 1, 2018. The adoption of this guidance did not have a material impact on the Company's financial statements and disclosures.

g. In August 2017, the FASB issued ASU 2017-12, Derivatives and Hedging (ASC 815) - Targeted Improvements to Accounting for Hedging Activities. The amendments in this guidance better align an entity's risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results. The Company elected to early adopt this standard during the fourth quarter of fiscal 2019. The adoption of this guidance did not have a material impact on the Company's financial statements and disclosures.

h. In August 2018, the SEC issued Release No. 33-10532, Disclosure Update and Simplification. In addition to eliminating certain disclosure requirements, this release also amends the interim financial statement requirements to require provision of the information required by Regulation S-X Rule 3-04 for the current and comparative year-to-date periods, with subtotals for each interim period. Rule 3-04 requires a reconciliation of stockholders' equity beginning and ending balances for each period for which a statement of comprehensive income is required to be filed. The Company adopted this guidance during the Company's second quarter of fiscal year 2019. The adoption of this guidance did not have a material impact on the Company's disclosures.

New Accounting Releases

a. In June 2018, the 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.

b. In August 2018, the FASB issued updated guidance (ASU 2018-13) as part of the disclosure framework project, which focuses on improving the effectiveness of disclosures in the notes to the financial statements. The amendments in this update modify the disclosure requirements on fair value measurements in Topic 820, Fair Value Measurement. The amendments in this guidance are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019 (the Company's fiscal 2021), with early adoption permitted. The Company is currently evaluating the potential impact of this guidance on the Company's disclosures.

c. In August 2018, the FASB issued updated guidance (ASU 2018-14) intended to modify the disclosure requirements for employers that sponsor defined pension or postretirement plans. The amendments in this guidance are effective for fiscal years ending after December 15, 2020 (the Company's fiscal 2021), with early adoption permitted. The Company is currently evaluating the potential impact of this guidance on the Company's disclosures.

Special Note Regarding Smaller Reporting Company Status

In June 2018, the SEC issued Release 33-10513; 34-83550, Amendments to Smaller Reporting Company Definition, which changed the definition of a smaller reporting company in Rule 12b-2 of the Securities Exchange Act of 1934, as amended. Under this release, the new thresholds for qualifying are (1) public float of less than $250 million or (2) annual revenue of less than $100 million and public float of less than $700 million (including no public float). The rule change was effective on September 10, 2018, the Company's first fiscal quarter of fiscal year 2019. The Company continues to qualify as a smaller reporting company based on its public float as of the last business day of its second fiscal quarter of fiscal year 2019. A smaller reporting company may choose to comply with scaled or non-scaled financial and non-financial disclosure requirements on an item-by-item basis. The Company has scaled some of its disclosures of financial and non-financial information in this annual report. The Company may determine to provide scaled disclosures of financial or non-financial information in future quarterly reports, annual reports and/or proxy statements if it remains a smaller reporting company under SEC rules.

B. ACQUISITION OF VETH PROPULSION HOLDING B.V.

On July 2, 2018, the Company completed the acquisition of 100% of the outstanding common stock of Veth Propulsion. Veth Propulsion is a global manufacturer of highly-engineered primary and auxiliary propulsions and propulsion machinery for maritime vessels, including rudder propellers, bow thrusters, generator sets and engine service and repair, 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 Propulsion products in North America and Asia. This acquisition was pursuant to a Share Purchase Agreement ("Purchase Agreement") entered into by Twin Disc NL Holding B.V., a wholly-owned subsidiary of the Company, with Het Komt Vast Goed B.V., the prior parent of Veth Propulsion, on June 13, 2018. Veth Propulsion is reported as part of the Company's manufacturing segment.

Under the terms of the Purchase Agreement, the Company paid an aggregate of approximately $59,407 in cash, and $1,991 in shares of common stock on May 13, 2019, which represents the fair value of 139,347 shares. The shares of stock were issued in settlement of the earn-out, a contingent consideration, after Veth Propulsion demonstrated that it achieved the profitability target (earnings before interest, tax, depreciation and amortization or "EBITDA") under the terms of the Purchase Agreement. The difference between the fair value at settlement and the initial fair value assigned to the earn-out at acquisition date of $2,921 is recognized in the income statement. The maximum earn-out at acquisition was $3,300. The fair value at acquisition was determined by using a discounted probability weighted approach. See Note R, Restructuring of Operations and Other Operating Income.

The total consideration transferred at acquisition date was:

Cash, paid at closing and after agreed-upon working capital adjustments	$ 59,407
Fair value of contingent consideration at acquisition date	2,921
Total	$ 62,328

Fair value of assets acquired and liabilities assumed at acquisition date:

Fair Value of Assets Acquired	
Cash, including restricted cash	$ 1,078
Accounts receivable and other current assets	10,437
Inventories	26,862
Property, plant and equipment	2,661
Intangibles (a)	26,500
Accounts payable and accrued liabilities	(21,208)
Deferred tax liability	(8,001)
Total net assets acquired	38,329
Goodwill (b)	23,999
Total consideration	$ 62,328

(a) Intangibles consist of customer relationships, technology and know-how and tradenames, with estimated useful lives 12 years, 7 years, and 10 years, respectively, and weighted average remaining useful life of approximately 9 years. The amounts acquired are presented in Note F, Goodwill and Other Intangibles.

(b) The Company is not able to deduct any of the goodwill for tax purposes.

The Company financed the payment of the cash consideration through borrowings under a new credit agreement entered into on June 29, 2018 with BMO Harris Bank N.A. (the "Credit Agreement"). The Credit Agreement is further discussed in Note I, Debt.

Summary Unaudited Pro Forma Financial Information

The following table presents financial information for Veth Propulsion that is included in the Company's consolidated statement of operations for the year ended June 30, 2019:

	Year Ended June 30, 2019
Net sales	$ 54,909
Gross profit (a)	10,085
Operating loss (b)	(1,281)
Net loss attributable to Twin Disc	(1,849)

(a) Gross profit includes the non-recurring purchase accounting charge for the step-up of inventories acquired of $4,277 for the year.
(b) In addition to (a), operating loss includes the depreciation of property, plant and equipment and amortization of intangible assets acquired of $2,636 for the year. Operating loss also includes one-time transaction charges related to the acquisition of $461 for the year.

The following table presents unaudited supplemental pro forma information as if the acquisition of Veth Propulsion had occurred on July 1, 2017.

	Year Ended June 30, 2019	Year Ended June 30, 2018
Net sales	$ 302,663	$ 296,556
Gross profit (a)	93,918	92,158
Net income attributable to Twin Disc (b)	14,227	5,277
Basic income per share attributable to Twin Disc common shareholders	$ 1.13	$ 0.47
Diluted income per share attributable to Twin Disc common shareholders	$ 1.12	$ 0.46
Weighted average number of common shares outstanding:		
Basic	12,571	11,295
Diluted	12,682	11,395

(a) Gross profit includes the amortization of the step-up of inventories of $4,715 for the year ended June 30, 2018. For the year ended, June 30, 2019, the amortization of the step-up of inventories of $4,277 is excluded.
(b) In addition to (a), this includes the amortization of intangible assets acquired and interest expense on borrowings under the Credit Agreement net of other expenses, amounting to $4,542 before tax, for the year ended June 30, 2018, as well as $1,768 related to one-time transaction charges. For the year ended June 30, 2019, this excludes one-time transaction charges related to the acquisition of $461.

C. REVENUE RECOGNITION

The Company designs, manufactures and sells marine and heavy duty off highway power transmission equipment. Products offered include: marine transmissions, azimuth drives, 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.

Identify contract with customer:

The Company's customers consist of distributors and direct end-users. With regard to distributors, the Company generally has written distribution agreements which describe the terms of the distribution arrangement, such as the product range, the sales territory, product pricing, sales support, payment and returns policy, etc. Customer contracts are generally in the form of acknowledged purchase orders. Services to be rendered, as part of the delivery of those products, are also generally specified. Such services include installation reviews and technical commissioning.

Performance obligations:

The Company's performance obligations primarily consist of product delivery and certain service obligations such as technical commissioning, repair services, installation reviews, and shift development.

Transaction price:

The Company considers the invoice price as the transaction price.

Allocation of transaction price:

The Company determined that the most relevant allocation method for its service obligations is to apply the expected cost plus appropriate margin. This is the Company's practice of billing for repairs, overhaul, and other product service related time incurred by its technicians.

Recognize revenue:

Revenue is recognized as each performance obligation is satisfied which is typically at a point in time. For technical commissioning, repairs, installation review, and shift development services, revenue is recognized upon completion of the service.

Disaggregated revenue:

The following table presents details deemed most relevant to the users of the financial statements for the year ended June 30, 2019.

Net sales by product group for year ended June 30, 2019 is summarized as follows:

	Manufacturing	Distribution	Elimination of Intercompany Sales	Total
Industrial	$ 30,393	$ 8,079	$ (4,430)	$ 34,042
Land-based transmissions	111,260	30,483	(28,950)	112,793
Marine and propulsion systems	138,704	62,329	(50,796)	150,237
Other	71	5,590	(70)	5,591
Total	$ 280,428	$ 106,481	$ (84,246)	$ 302,663

Contract assets/liabilities:

There are no significant balances of contract assets or liabilities as of June 30, 2019.

D. INVENTORIES

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

	2019	2018
Finished parts	$ 57,682	$ 49,332
Work in process	23,812	13,183
Raw materials	44,399	21,486
Total	$ 125,893	$ 84,001

Inventories stated on a LIFO basis represent approximately 52% and 48% of total inventories at June 30, 2019 and 2018, respectively. The approximate current cost of the LIFO inventories exceeded the LIFO cost by $25,709 and $24,630 at June 30, 2019 and 2018, respectively. The Company had reserves for inventory obsolescence of $10,463 and $8,427 at June 30, 2019 and 2018, respectively.

E. PROPERTY, PLANT AND EQUIPMENT

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

	2019	2018
Land	$ 6,479	$ 6,525
Buildings	47,627	46,473
Machinery and equipment	158,183	144,457
	212,289	197,455
Less: accumulated depreciation	(141,031)	(141,988)
	$ 71,258	$ 55,467

Depreciation expense for the years ended June 30, 2019 and 2018 was $6,682 and $6,315, respectively.

F. GOODWILL AND OTHER INTANGIBLES

Goodwill

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

In fiscal 2018 and prior years, the annual testing date was the last day of the fiscal year. In fiscal 2019, the Company changed its annual testing date to the first day of the Company's fourth fiscal quarter in order to provide the Company more time and better information to perform the analyses. The Company does not believe that this change constitutes a material change to the method in applying an accounting principle.

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.

On July 2, 2018, as discussed in Note B, Acquistion of Veth Propulsion Holding B.V., the Company acquired goodwill in the amount of $23,999 and intangible assets in the amount of $26,500 consisting of customer relationships, technology and know-how, and trade names as part of the acquisition of Veth Propulsion. As of June 30, 2019, these amounts are final. The Company, in coordination with an independent valuation firm, completed its fair value measurements and has recorded all purchase accounting entries in its financial statements for the year ended June 30, 2019. Veth Propulsion is reported as part of the Company's manufacturing segment and European Propulsion reporting unit.

During the 2019 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 on March 30, 2019, the first day of its fourth fiscal quarter, its measurement date, using current assumptions, including updated forecasted cash flows and reporting unit specific discount rates of 13.0% and 14.0% for its European Propulsion and European Industrial reporting units, respectively, and concluded that goodwill is not impaired. As of June 30, 2019, goodwill in the amounts of $23,371 and $2,583 is carried in the European Propulsion and European Industrial reporting units, respectively. The fair values exceeded their carrying value by 118% and 41% for the European Propulsion and European Industrial reporting units, respectively, and therefore no impairment charge was required for these reporting units.

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	European Industrial	European Propulsion
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**	**–**
Acquisition	23,999	–	23,999	–	23,999
Translation adjustment	(737)	–	(737)	(109)	(628)
Balance at June 30, 2019	**$ 39,776**	**$ (13,822)**	**$ 25,954**	**$ 2,583**	**$ 23,371**

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	Customer Relationships	Technology Know-how	Trade Name	Other
Balance at June 30, 2017	**$ 13,436**	**$ (11,632)**	**$ 1,804**	**$ –**	**$ –**	**$ 1,319**	**$ 485**
Addition	19	–	19	–	–	–	19
Amortization	–	(149)	(149)	–	–	(84)	(65)
Translation adjustment	30	–	30	–	–	53	(23)
Balance at June 30, 2018	**13,485**	**(11,781)**	**1,704**	**–**	**–**	**1,288**	**416**
Addition	236	–	236	–	–	–	236
Acquistion	26,500	–	26,500	16,300	8,400	1,800	–
Amortization	–	(2,653)	(2,653)	(1,123)	(1,172)	(261)	(97)
Translation adjustment	(634)	–	(634)	(334)	(203)	(94)	(3)
Balance at June 30, 2019	**$ 39,587**	**$ (14,434)**	**$ 25,153**	**$ 14,843**	**$ 7,025**	**$ 2,733**	**$ 552**

Other intangibles consist of certain proprietary technology, computer software, patents and licensing agreements.

The weighted average remaining useful life of the intangible assets included in the table above is approximately 9 years.

Intangible amortization expense for the years ended June 30, 2019 and 2018 was $2,653 and $149, respectively. Estimated intangible amortization expense for each of the next five fiscal years is as follows:

Fiscal Year	
2020	$ 2,904
2021	2,890
2022	2,874
2023	2,888
2024	2,789
Thereafter	10,808

The gross carrying amount of the Company's intangible assets that have indefinite lives and are not subject to amortization as of June 30, 2019 and 2018 are $200 and $202, respectively. These assets are comprised of acquired tradenames.

G. ACCRUED LIABILITIES

Accrued liabilities at June 30 were as follows:

	2019	2018
Customer deposits	$ 14,924	$ 5,426
Salaries and wages	6,982	10,311
Warranty	3,034	3,952
Accrued professional fees	1,843	3,501
Other	12,826	9,786
Total	$ 39,609	$ 32,976

H. 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:

	2019	2018
Reserve balance, July 1	$ 4,407	$ 2,062
Current period expense and adjustments	2,766	4,998
Payments or credits to customers	(3,953)	(2,671)
Acquisition	557	–
Translation adjustment	(41)	18
Reserve balance, June 30	$ 3,736	$ 4,407

The current portion of the warranty accrual ($3,034 and $3,952 for fiscal 2019 and 2018, respectively) is reflected in accrued liabilities, while the long-term portion ($702 and $455 for fiscal 2019 and 2018, respectively) is included in other long-term liabilities on the consolidated balance sheets.

I. 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 (the "2016 Credit Agreement") 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 $35,000 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.

On July 2, 2018, in connection with the acquisition of Veth Propulsion, as described in Note B, Acquisition of Veth Propulsion Holding B.V., the Company drew a total of $60,729 of additional borrowings on the Credit Agreement, consisting of a $35,000 Term Loan payable and revolver borrowings of $25,729. The new borrowing was used to pay the cash consideration at closing of $58,862, and to pay off the loan owed to the prior parent of Veth Propulsion in the amount of $1,865.

On September 25, 2018, the Company used the proceeds of a stock offering (see Note K, Shareholders' Equity) of $32,210 to partially pay down the Term Loan and Revolving Loans.

On March 4, 2019, the Company entered into a second amendment (the "Second Amendment") to the Credit Agreement. The Second Amendment reduced the principal amount of the Term Loan commitment under the Credit Agreement from $35,000 to $20,000. In connection with the Second Amendment, the Company issued an amended and restated term note in the amount of $20,000 to BMO, which amended the original $35,000 note provided under the Credit Agreement.

Prior to entering into the Second Amendment, the outstanding principal amount of the Term Loan under the Credit Agreement was $10,849. On the date of the Second Amendment, the BMO made an additional advance on the Term Loan to the Company in the amount of $9,151. The Second Amendment also extended the maturity date of the Term Loan from January 2, 2020 to March 4, 2026, and added a requirement that the Company make principal installments of $500 per quarter starting with the quarter ending June 30, 2019.

The Second Amendment also reduces the applicable margin for purposes of determining the interest rate applicable to the Term Loan. Previously, the applicable margin was 3.00%, which was added to the Monthly Reset LIBOR Rate or the Adjusted LIBOR, as applicable. Under the Second Amendment, the applicable margin is between 1.375% and 2.375%, depending on the Company's total funded debt to EBITDA ratio.

The Second Amendment also adjusts certain financial covenants made by the Company under the Credit Agreement. Specifically, the Company has covenanted (i) not to allow its total funded debt to EBITDA ratio to be greater than 3.00 to 1.00 (the cap had previously been 3.50 to 1.00 for quarters ending on or before September 30, 2019 and 3.25 to 1.00 for quarters ending on or about December 31, 2019 through September 30, 2020), and (ii) that its tangible net worth will not be less than $100,000 plus 50% of net income for each fiscal year ending on and after June 30, 2019 for which net income is a positive number (the $100,000 figure had previously been $70,000).

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. The Company has also pledged 100% of its equity interests in certain domestic subsidiaries and 65% of its equity interests in certain foreign subsidiaries. The Company also entered into a Collateral Assignment of Rights under Purchase Agreement for its acquisition of Veth Propulsion described in Note B, Acquisition of Veth Propulsion Holding B.V..

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.

In addition to the monthly interest payments and any mandatory principal payments required by the Credit Agreement (if applicable), the Company is responsible for paying a quarterly Revolving Credit Commitment Fee and quarterly Letter of Credit Fees. The Revolving Credit Commitment Fee is 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 is 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.

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

	2019	2018
Revolving loan agreement	$ 22,666	$ 4,787
Term loan (due March 2026)	19,500	–
Other	325	37
Subtotal	42,491	4,824
Less: current maturities	(2,000)	–
Total long-term debt	**$ 40,491**	**$ 4,824**

Other long-term debt pertains mainly to a financing arrangement in Europe. During fiscal 2019, the Company entered into sale leaseback agreements with a leasing company covering various Company vehicles. Under the terms of the agreements, the Company received $329 in cash proceeds and agreed to lease back those same vehicles under various terms, ranging from 3 to 5 years. Under ASC 842, Leases, these agreements are required to be accounted for as financing transactions. Consequently, the Company recorded long-term liabilities for the proceeds received, and they are reduced as lease payments are made. These liabilities carry implied interest rates ranging from 7% to 25%. A total amount of $28 in principal was paid on these liabilities during the current fiscal year.

During fiscal year 2019, the average interest rate was 4.71% on the Term Loan, and 2.99% on the Revolving Loans.

As of June 30, 2019, the Company's borrowing capacity under the terms of the Credit Agreement was approximately $47,324 and the Company had approximately $24,658 of available borrowings.

The Company's borrowings described above approximates fair value at June 30, 2019 and June 30, 2018. If measured at fair value in the financial statements, long-term debt (including the current portion) would be classified as Level 2 in the fair value hierarchy.

On April 22, 2019, the Company entered into an interest rate swap arrangement with Bank of Montreal, with a notional amount of $20,000 and a maturity date of March 4, 2026 to hedge the Term Loan. This swap has been designated as a cash flow hedge under ASC 815, Derivatives and Hedging. This swap is included in the disclosures in Note T, Derivative Financial Instruments.

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

Fiscal Year	
2020	$ 2,000
2021	2,161
2022	2,081
2023	24,709
2024	2,016
Thereafter	9,542
Total	**$ 42,491**

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 $952 with a weighted average interest rate of 5.0% as of June 30, 2019, and $1,477 with a weighted average interest rate of 5.0% as of June 30, 2018.

J. LEASE OBLIGATIONS

In accordance with ASC 842, Leases, the Company's leases with terms longer than twelve months are recorded on the consolidated balance sheets. The Company leases certain office and warehouse space, as well as production and office equipment.

The Company had $14,138 and $6,527 of operating lease right-of-use assets recorded in property, plant and equipment, net as of June 30, 2019 and June 30, 2018, respectively. The Company had $14,130 and $6,527 of operating lease liabilities recorded in lease obligations as of June 30, 2019 and June 30, 2018, respectively.

The Company had $545 and $11 of finance lease right-of-use assets recorded in property, plant and equipment, net as of June 30, 2019 and June 30, 2018, respectively. The Company had $553 and $0 of finance lease liabilities recorded in lease obligations as of June 30, 2019 and June 30, 2018, respectively.

Approximate future minimum rental commitments under non-cancellable leases as of June 30, 2019 were as follows:

	Operating Leases	Finance Leases
2020	$ 3,186	$ 136
2021	2,489	136
2022	1,950	136
2023	1,722	132
2024	1,532	112
Thereafter	11,112	–
Total future lease payments	**21,991**	**652**
Less: Amount representing interest	(7,861)	(99)
Present value of future payments	**$ 14,130**	**$ 553**

The components of lease expense were as follows:

	For the Year Ended June 30, 2019	For the Year Ended June 30, 2018
Finance lease cost:		
Amortization of right-of-use assets	$ 27	$ 3
Interest on lease liabilities	8	1
Operating lease cost	3,348	2,462
Short-term lease cost	40	39
Variable lease cost	37	8
Total lease cost	**3,460**	**2,513**
Less: Sublease income	(222)	(204)
Net lease cost	**$ 3,238**	**$ 2,309**

Other information related to leases was as follows:

	For the Year Ended June 30, 2019	For the Year Ended June 30, 2018
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 3,338	$ 2,417
Operating cash flows from finance leases	18	3
Financing cash flows from finance leases	9	1
Right-of-use-assets obtained in exchange for lease obligations:		
Operating leases	13,875	4,019
Finance leases	553	–
Weighted average remaining lease term (years):		
Operating leases	11.1	5.6
Finance leases	4.8	4.0
Weighted average discount rate:		
Operating leases	7.7%	7.2%
Finance leases	7.3%	3.9%

K. SHAREHOLDERS' EQUITY

The Company completed the sale of 1,533,334 shares of its common stock through a registered offering which closed on September 25, 2018, at a price to the public of $22.50 per share. The net proceeds received by the Company and after underwriting expenses of $2,070 and offering expenses of $220, were $32,210 and were recorded as paid-in capital as of June 30, 2019. The proceeds were used to partially pay down the Term Loan and Revolving Loans (see Note I, Debt).

The total number of shares of common stock outstanding at June 30, 2019 and 2018 was 13,240,278 and 11,553,685, respectively. At June 30, 2019 and 2018, treasury stock consisted of 1,392,524 and 1,545,783 shares of common stock, respectively. The Company issued 157,043 and 67,286 shares of treasury stock in fiscal 2019 and 2018, respectively, to fulfill its obligations under the stock option plans and restricted stock and performance share award grants, as well as the contingent consideration related to the acquisition of Veth Propulsion Holding B.V. The Company also recorded forfeitures of 3,784 and 32,734 shares of previously issued restricted stock in fiscal 2019 and 2018, 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 two most recent fiscal years. As of June 30, 2019 and 2018, 315,000 shares remain authorized for purchase.

Cash dividends per share were $0.00 in both fiscal 2019 and 2018.

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, 2019 and 2018 are as follows:

	2019	2018
Translation adjustments	$ 4,439	$ 7,085
Net loss on cash flow hedge derivatives, net of income taxes of $156 and $0, respectively	(509)	–
Benefit plan adjustments, net of income taxes of $12,707 and $11,494 respectively	(41,901)	(30,877)
Accumulated other comprehensive loss	**$ (37,971)**	**$ (23,792)**

A reconciliation for the changes in accumulated other comprehensive income (loss), net of tax, by component for the years ended June 30, 2018 and June 30, 2019 is as follows:

	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)**

	Translation Adjustment	Benefit Plan Adjustment	Cash Flow Hedges
Balance at June 30, 2018	$ 7,085	$ (30,877)	$ –
Other comprehensive loss before reclassifications	(2,646)	(6,068)	(509)
Release stranded tax effects	–	(6,903)	–
Amounts reclassified from accumulated other comprehensive income	–	1,947	–
Net current period other comprehensive income	(2,646)	(11,024)	(509)
Balance at June 30, 2019	**$ 4,439**	**$ (41,901)**	**$ (509)**

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)**

A reconciliation for the reclassifications out of accumulated other comprehensive income (loss), net of tax for the year ended June 30, 2019 is as follows:

Amortization of benefit plan items	Amount Reclassified
Actuarial losses	$ (2,710)
Transition asset and prior service benefit	176
Total before tax benefit	(2,534)
Tax benefit	587
Total reclassification net of tax	$ (1,947)

L. 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, azimuth drives, 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, energy and natural resources, government, and industrial markets.

Net sales by product group is summarized as follows:

	2019	2018
Industrial	$ 34,042	$ 30,888
Land-based transmissions	112,793	107,169
Marine and propulsion systems	150,237	96,785
Other	5,591	5,891
Total	$ 302,663	$ 240,733

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 oilfield and natural gas, military and airport rescue and fire fighting. The marine and propulsion systems include marine transmission, azimuth drives, 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:

2019	Manufacturing	Distribution	Total
Net Sales	$ 280,428	$ 106,481	$ 386,909
Intra-segment sales	20,384	14,026	34,410
Inter-segment sales	46,078	3,758	49,836
Interest income	1,154	26	1,180
Interest expense	3,086	(37)	3,049
Income taxes	7,939	353	8,292
Depreciation and amortization	12,893	402	13,295
Net income attributable to Twin Disc	25,062	248	25,310
Assets	384,612	46,076	430,688
Expenditures for segment assets	10,725	663	11,388

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	266,417	52,230	318,647
Expenditures for segment assets	5,482	248	5,730

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

Net Sales	2019	2018
Total net sales from reportable segments	$ 386,909	$ 301,071
Elimination of inter-company sales	(84,246)	(60,338)
Total consolidated net sales	**$ 302,663**	**$ 240,733**

Net income attributable to Twin Disc:	2019	2018
Total net income from reportable segments	$ 25,310	$ 23,866
Other adjustments and corporate expenses	(14,637)	(14,338)
Total consolidated net income attributable to Twin Disc	**$ 10,673**	**$ 9,528**

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:

2019	Segment Totals	Adjustments	Consolidated Totals
Interest income	$ 1,180	$ (1,137)	$ 43
Interest expense	3,049	(1,122)	1,927
Income taxes	8,292	(4,581)	3,711
Depreciation and amortization	13,295	317	13,612
Assets	430,688	(83,818)	346,870
Expenditures for segment assets	11,388	591	11,979

2018	Segment Totals	Adjustments	Consolidated Totals
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	318,647	(77,407)	241,240
Expenditures for segment assets	5,730	598	6,328

All adjustments represent inter-company eliminations and corporate amounts.

Geographic information about the Company is summarized as follows:

Net Sales	2019	2018
United States	$ 132,467	$ 141,705
Netherlands	31,521	4,755
China	28,772	11,664
Italy	12,755	12,551
Australia	12,463	12,479
Canada	10,464	13,397
Other countries	74,221	44,182
Total	$ 302,663	$ 240,733

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:

Long-lived assets	2019	2018
United States	$ 41,233	$ 37,765
Netherlands	13,186	–
Belgium	8,595	7,576
Switzerland	6,810	6,841
Italy	1,894	2,230
Other countries	3,298	4,905
Total	$ 75,016	$ 59,317

There were no customers that accounted for 10% of consolidated net sales in fiscal 2019. The Company has one distributor customer, primarily of its manufacturing segment, that accounted for 10% of total Company sales for fiscal 2018.

M. STOCK-BASED COMPENSATION

In fiscal 2019, the Company adopted the Twin Disc, Incorporated 2018 Long-Term Incentive Plan (the "2018 LTI Plan"). Benefits under the 2018 LTI Plan may be granted, awarded or paid in any one or a combination of stock options, stock appreciation rights, restricted stock awards, restricted stock units, cash-settled restricted stock units, performance stock awards, performance stock unit awards, performance unit awards, and dividend equivalent awards. There is reserved for issuance under the Plan an aggregate of 850,000 shares of the Company's common stock, which may be authorized and unissued shares or shares reacquired by the Company in the open market or a combination of both. The aggregate amount is subject to proportionate adjustments for stock dividends, stock splits and similar changes.

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:

	2019	2018
2018 LTI Plan	742,325	–
2010 Directors' Plan	61,354	80,938

Performance Stock Awards ("PSA")

In fiscal 2019 and 2018, the Company granted a target number of 50,004 and 54,854 PSAs, respectively, to various employees of the Company, including executive officers.

The PSAs granted in fiscal 2019 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, 2021. 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 75,006. Based upon favorable actual results to date, the Company is currently accruing compensation expense for these PSAs.

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.

There were 96,124 and 145,718 unvested PSAs outstanding at June 30, 2019 and 2018, 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, 2019 and 2018, related PSAs, was $1,196 and $574, respectively. The tax benefit from compensation expense for the year ended June 30, 2019 and 2018, related PSAs, was $278 and $172, respectively. The weighted average grant date fair value of the unvested awards at June 30, 2019 was $20.38. At June 30, 2019, the Company had $1,073 of unrecognized compensation expense related to the unvested shares that would vest if the specified target objective was achieved for the fiscal 2019 and 2018 awards. The total fair value of performance stock awards vested in fiscal 2019 was $1,228. The total fair value of performance stock awards vested in fiscal 2018 was $272.

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 2019 and 2018, the Company granted 43,305 and 85,327 service based restricted shares, respectively, to employees and non-employee directors in each year. A total of 3,784 and 32,734 shares of restricted stock were forfeited during fiscal 2019 and 2018, respectively. There were 172,637 and 237,657 unvested shares outstanding at June 30, 2019 and 2018, respectively. Compensation expense of $1,096 and $1,488 was recognized during the year ended June 30, 2019 and 2018, respectively, related to these service-based awards. The tax benefit from compensation expense for the year ended June 30, 2019 and 2018, related to these service-based awards, was $255 and $446, respectively. The total fair value of restricted stock grants vested in fiscal 2019 and 2018 was $2,391 and $1,809, respectively. As of June 30, 2019, the Company had $757 of unrecognized compensation expense related to restricted stock which will be recognized over the next three years.

Restricted Stock Unit Awards ("RSU")

Under the 2018 Long Term Incentive Plan, the Company has been authorized to issue RSUs. The RSUs entitle the employee to shares of common stock of the Company if the employee remains employed by the Company through a specified date, generally three years from the date of grant. During fiscal 2019, the Company granted 37,950 RSUs to various employees of the Company, including executive officers. The fair value of the RSUs (on the date of grant) is recorded as compensation expense over the vesting period. There were 37,950 unvested RSUs outstanding at June 30, 2019. Compensation expense of $299 was recognized during the year ended June 30, 2019. The tax benefit from compensation expense for the year ended June 30, 2019, related to these service-based awards, was $69. The weighted average grant date fair value of the unvested awards at June 30, 2019 was $25.77. As of June 30, 2019, the Company had $679 of unrecognized compensation expense related to RSUs 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 reelected 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, 2019 and 2018.

2004 Plans

The Company has 3,600 non-qualified stock options outstanding as of June 30, 2019 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 2019 were as follows:

	2019	Weighted Average Price	Weighted Remaining Contractual Life (Years)	Average Intrinsic Value
Non-qualified stock options:				
Options outstanding at beginning of year	7,200	$ 12.31		
Granted	–	–		
Canceled/expired	–	–		
Exercised	(3,600)	10.01		
Options outstanding at June 30	3,600	$ 14.61	1.00	$ 1.8

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 2019 and 2018 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 2019 and 2018, respectively.

The total intrinsic value of options exercised during the years ended June 30, 2019 and 2018 was approximately $47 and $38, respectively.

N. 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 $2,385 and $1,610 in fiscal 2019 and 2018, respectively. Total engineering and development costs were $12,594 and $9,932 in fiscal 2019 and 2018, respectively.

O. 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 healthcare and life insurance benefits for certain domestic retirees. All employees retiring after December 31, 1992, and electing to continue healthcare 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 2019 and 2018 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	
	2019	2018	2019	2018
Change in benefit obligation:				
Benefit obligation, beginning of year	$ 105,012	$ 118,170	$ 8,077	$ 11,574
Service cost	795	861	19	20
Interest cost	4,020	3,979	305	325
Actuarial loss (gain)	6,718	(8,690)	18	(2,608)
Contributions by plan participants	103	105	389	440
Benefits paid	(9,326)	(9,413)	(1,357)	(1,674)
Benefit obligation, end of year	$ 107,322	$ 105,012	$ 7,451	$ 8,077
Change in plan assets:				
Fair value of assets, beginning of year	$ 90,258	$ 94,372	$ –	$ –
Actual return on plan assets	4,125	2,894	–	–
Employer contribution	2,131	2,300	968	1,234
Contributions by plan participants	103	105	389	440
Benefits paid	(9,326)	(9,413)	(1,357)	(1,674)
Fair value of assets, end of year	$ 87,291	$ 90,258	$ –	$ –
Funded status	$ (20,031)	$ (14,754)	$ (7,451)	$ (8,077)
Amounts recognized in the balance sheet consist of:				
Other assets - noncurrent	$ 3	$ 157	$ –	$ –
Accrued liabilities - current	(645)	(679)	(962)	(1,241)
Accrued retirement benefits - noncurrent	(19,389)	(14,232)	(6,489)	(6,836)
Net amount recognized	$ (20,031)	$ (14,754)	$ (7,451)	$ (8,077)
Amounts recognized in accumulated other comprehensive loss consist of (net of tax):				
Net transition obligation	$ 178	$ 204	$ –	$ –
Prior service cost	144	360	(908)	–
Actuarial net loss	42,185	31,146	302	(833)
Net amount recognized	$ 42,507	$ 31,710	$ (606)	$ (833)

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 defined benefit and other postretirement benefit plans are as follows:

	Pension Benefits	Other Postretirement Benefits
Net transition obligation	$ 34	$ –
Prior service cost	45	(275)
Actuarial net loss	3,134	–
Net amount to be recognized	$ 3,213	$ (275)

The accumulated benefit obligation for all defined benefit pension plans was approximately $107,322 and $105,012 at June 30, 2019 and 2018, respectively.

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

	June 30	
	2019	2018
Projected and accumulated benefit obligation	$ 102,879	$ 100,699
Fair value of plan assets	82,845	85,788

Components of Net Periodic Benefit Cost:

	Pension Benefits	
	2019	2018
Service cost	$ 792	$ 868
Interest cost	4,019	3,981
Expected return on plan assets	(5,238)	(6,041)
Amortization of transition obligation	34	36
Amortization of prior service cost	64	67
Amortization of actuarial net loss	2,710	3,021
Net periodic benefit cost	$ 2,381	$ 1,932

	Other Postretirement Benefits	
	2019	2018
Service cost	$ 18	$ 20
Interest cost	304	325
Amortization of prior service cost	(274)	(206)
Amortization of actuarial net loss	–	32
Net periodic benefit cost	$ 48	$ 171

Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income for Fiscal 2019 (Pre-tax):

	Pension Benefits	Other Postretirement Benefits
Net loss	$ 8,098	$ 18
Prior service cost	(211)	–
Amortization of transition asset	(34)	–
Amortization of prior service (cost) benefit	(64)	275
Amortization of net (loss) gain	(2,711)	–
Total recognized in other comprehensive income	5,078	293
Net periodic benefit cost	2,381	48
Total recognized in net periodic benefit cost and other comprehensive income	$ 7,459	$ 341

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)

Additional Information

Assumptions

	Pension Benefits		Other Postretirement Benefits	
	2019	2018	2019	2018
Weighted average assumptions used to determine benefit obligations at June 30				
Discount rate	3.22%	4.01%	3.15%	4.09%
Expected return on plan assets	6.04%	6.74%		
Weighted average assumptions used to determine net periodic benefit costs for years ended June 30				
Discount rate	4.01%	3.51%	4.09%	3.41%
Expected return on plan assets	6.74%	6.68%		

The assumed weighted-average healthcare cost trend rate was 6.50% in 2019, grading down to 5% in 2025. A 1% increase in the assumed health care cost trend would increase the accumulated postretirement benefit obligation by approximately $97 and the service and interest cost by approximately $4. A 1% decrease in the assumed health care cost trend would decrease the accumulated postretirement benefit obligation by approximately $85 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, 2019 and 2018 by asset category were as follows:

		June 30	
Asset Category	Target Allocation	2019	2018
Equity securities	51%	49%	51%
Debt securities	40%	42%	39%
Real estate	9%	9%	10%
Total	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 $1,483 (1.7% of total plan assets) at June 30, 2019 and 98,211 shares with a fair market value of $2,438 (2.7% of total plan assets) at June 30, 2018.

The plans have a long-term return assumption of 6.25%. 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, 2019:

	Total	Level I	Level II	Level III
Cash and cash equivalents	$ 971	$ 971	$ –	$ –
Equity securities:				
Company common stock (a)	1,483	1,483	–	–
Common stock (a)	16,713	16,713	–	–
Mutual funds (b)	7,963	7,963	–	–
Annuity contracts (c)	6,171	–	–	6,171
Total	$ 33,301	$ 27,130	$ –	$ 6,171
Investments Measured at Net Asset Value (d)	53,990			
Total	$ 87,291			

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**			

(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, 2019 and June 30, 2018:

	2019	2018
Fixed income funds	$ 33,568	$ 31,852
International equity securities	3,168	3,294
Real estate	7,069	8,218
Hedged equity mutual funds	10,185	11,260
Total	**$ 53,990**	**$ 54,624**

The following tables present a reconciliation of the fair value measurements using significant unobservable inputs (Level III) as of June 30, 2019 and 2018:

	2019	2018
Beginning balance	$ 6,113	$ 7,779
Actual return on plan assets:		
Relating to assets still held at reporting date	216	(58)
Purchases, sales and settlements, net	(158)	(1,608)
Ending balance	**$ 6,171**	**$ 6,113**

Cash Flows

Contributions

The Company expects to contribute $1,936 to its defined benefit pension plans in fiscal 2020.

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
2020	$ 9,411	$ 977
2021	8,336	905
2022	8,138	825
2023	7,737	753
2024	7,395	681
Years 2025 - 2029	32,656	2,549

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 $2,276 and $1,935 in fiscal 2019 and 2018, respectively.

P. INCOME TAXES

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

	2019	2018
United States	$ 7,059	$ 8,679
Foreign	7,448	5,741
Total	$ 14,507	$ 14,420

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

	2019	2018
Currently payable:		
Federal	$ 248	$ 234
State	261	135
Foreign	(3,644)	1,400
Total	(3,135)	1,769
Deferred:		
Federal	920	5,529
State	(7)	167
Foreign	5,933	(2,692)
Total	6,846	3,004
	$ 3,711	$ 4,773

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

	2019	2018
Deferred tax assets:		
Retirement plans and employee benefits	$ 7,732	$ 6,910
Foreign tax credit carryforwards	6,296	6,866
Federal tax credits	1,057	774
State net operating loss and other state credit carryforwards	1,269	1,190
Inventory	757	1,259
Reserves	765	1,099
Foreign NOL carryforwards	775	2,940
Accruals	339	324
Right of use assets – leases	3,691	–
Other assets	656	403
Total	23,337	21,765
Deferred tax liabilities:		
Property, plant and equipment	3,432	3,473
Intangibles	5,345	1,209
Long term lease obligations	3,617	–
Other liabilities	194	230
Total	12,588	4,912
Valuation allowance	–	–
Total net deferred tax assets	$ 10,749	$ 16,853

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, carry-back and carry-forward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset. The Company has evaluated the likelihood of whether the net deferred tax assets would be realized and concluded that it is more likely than not that all of deferred tax assets would be realized. 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:

	2019	2018
U.S. federal income tax at 21% (27.56% in 2018)	$ 3,046	$ 3,974
Increases (reductions) in tax resulting from:		
Foreign tax items	281	675
State taxes	209	272
Valuation allowance	–	(3,803)
Change in prior year estimate	(50)	(89)
Research and development tax credits	(306)	(162)
Section 199 deduction	–	(114)
Unrecognized tax benefits	158	(42)
Stock compensation	(153)	(114)
Rate changes	15	3,786
Deferred tax basis adjustments	(111)	431
Executive compensation	291	–
GILTI inclusion	284	–
FDII deduction	(74)	–
Other, net	121	(41)
Total	$ 3,711	$ 4,773

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 2018. However, several provisions of the Tax Act have differing effective dates, meaning these provisions did not impact the Company's financial statements until fiscal year 2019. The provisions impacting the Company's fiscal year 2019 financial statements include the global intangible low taxed income ("GILTI") and foreign-derived intangible income ("FDII") deduction and limitations on the deductibility of executive compensation.

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 year 2019 and future years. The Company has prepared a complete 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.

Executive Compensation Limitations: The Tax Act substantially modifies the limitation on corporate deductibility of executive compensation under Section 162(m) of the Code. Section 162(m) limits the deduction for compensation paid by a publicly held corporation to certain of its executive employees to $1,000 per year. The Tax Act has amended the definition of "covered employee" to correspond to the general SEC reporting requirements for named executive officers. These are the corporation's principal executive officer, principal financial officer, and the next three highest-paid executive officers. Most significantly, the Tax Act has eliminated the exemptions for commissions and performance-based compensation.

Global Intangible Low Taxed Income ("GILTI"): The Tax Act changed the foreign source income calculations and related foreign tax credit amounts. The GILTI requires 10% domestic shareholders (U.S. Shareholders) of controlled foreign corporations ("CFC's") to include in gross income annually the U.S. Shareholders' pro rata share of GILTI for the year.

Foreign Derived Intangible Income ("FDII"): The Tax Act provides companies with this new permanent deduction. An incentive for C corporations to generate revenue from serving foreign markets, the provision applies a preferential tax rate to eligible income. The new tax law assumes a fixed rate of return on a corporation's tangible assets. Any remaining income is deemed to be generated by intangible assets.

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 $6,208 at June 30, 2019. 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 2015 through 2019 for the Company's 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 $938 of unrecognized tax benefits as of June 30, 2019, 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 from 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, 2019	June 30, 2018
Unrecognized tax benefits, beginning of year	$ 816	$ 827
Additions based on tax positions related to the prior year	31	–
Additions based on tax positions related to the current year	91	303
Reductions based on tax positions related to the prior year	–	(9)
Subtractions due to statutes closing	–	(105)
Settlements with taxing authorities	–	(200)
Unrecognized tax benefits, end of year	**$ 938**	**$ 816**

Substantially all of the Company's unrecognized tax benefits as of June 30, 3019, if recognized, would affect the effective tax rate. As of June 30, 2019 and 2018, the amounts accrued for interest and penalties totaled $148 and 93, respectively, and are not included in the reconciliation above.

Q. 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.

R. RESTRUCTURING OF OPERATIONS AND OTHER OPERATING INCOME

Restructuring Expenses

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 $1,179 and $3,398 in fiscal 2019 and 2018, respectively.

Restructuring activities since June 2015 have resulted in the elimination of 176 full-time employees in the manufacturing segment. Accumulated costs to date under these programs within the manufacturing segment through June 30, 2019 were $10,452.

The following is a roll-forward of restructuring activity:

Accrued restructuring liability, June 30, 2017	**$ 92**
Additions	3,398
Payments and adjustments	(3,400)
Accrued restructuring liability, June 30, 2018	**90**
Additions	1,179
Payments and adjustments	(1,269)
Accrued restructuring liability, June 30, 2019	**$ –**

Other Operating Income – Sale of Mill Log Business

On February 7, 2019, as part of its ongoing initiative to focus resources on core manufacturing and product development activities, the Company entered into an asset purchase agreement with one of its major distributor customers. Under this agreement, the Company sold substantially all of the assets and intangible rights of Mill-Log Equipment Co., Inc. and Mill-Log Wilson Equipment Ltd. (the "Mill Log Business"), its wholly-owned subsidiaries which distributed Twin Disc products in the northwestern U.S. and western Canada territories. The Mill Log Business reported pre-tax loss of $1,374 and pre-tax income of $1,139 in fiscal 2019 and 2018, respectively. The results of operations from the Mill Log Business are reported as part of the Company's distribution segment. Assets sold consisted primarily of inventories, with a carrying value of $6,298, and property and equipment including right-of-use leases, with a carrying value of $592. The sale closed on March 4, 2019 and the Company received a total consideration of $7,658, consisting of cash proceeds of $5,158 and a note receivable for $2,500 due on March 4, 2020. The Company recognized a pre-tax gain on sale of the Mill Log Business of $768, and recorded it as part of other operating income in the statement of operations in the current year.

Other Operating Income – Fair Value Adjustment of Contingent Consideration

As discussed in Note B, Acquisition of Veth Propulsion Holding B.V., the Company issued a contingent consideration as part of the Veth Propulsion acquisition; the fair value at acquisition date was $2,921. The contingency was settled after Veth Propulsion demonstrated that it achieved the earnings before interest, tax, depreciation and amortization ("EBITDA") amount as provided for under the Purchase Agreement.

On May 13, 2019, the Company issued 139,347 shares of the Company's common stock, with a fair value of $1,991 in settlement of the contingent consideration. Under ASC 805, Business Combinations, any change in fair value of the contingent consideration is recognized in the current period income statement and is not an adjustment to the opening balance sheet or the determination of goodwill. Accordingly, the Company recognized a gain of $809, after foreign exchange impact; this amount is reported as other operating income in the current fiscal year.

S. 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 under the 2010 LTI Plan 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:

	2019	2018
Basic:		
Net income	$ 10,796	$ 9,647
Less: Net earnings attributable to noncontrolling interest	(123)	(119)
Less: Undistributed earnings attributable to unvested shares	(148)	(222)
Net income available to Twin Disc shareholders	10,525	9,306
Weighted average shares outstanding - basic	12,571	11,295
Basic Income Per Share:		
Net income per share - basic	$ 0.84	$ 0.82
Diluted:		
Net income	$ 10,796	$ 9,647
Less: Net earnings attributable to noncontrolling interest	(123)	(119)
Less: Undistributed earnings attributable to unvested shares	(148)	(222)
Net income available to Twin Disc shareholders	10,525	9,306
Weighted average shares outstanding - basic	12,571	11,295
Effect of dilutive stock awards	111	100
Weighted average shares outstanding - diluted	12,682	11,395
Diluted Income Per Share:		
Net income per share - diluted	$ 0.83	$ 0.82

The following potential common shares were excluded from diluted EPS for the year ended June 30, 2019 because they were anti-dilutive: 80,164 related to the Company's unvested PSAs, 172,637 related to the Company's unvested RS awards, 13,123 related to the Company's unvested RSUs, and 3,483 related to outstanding stock options.

The following potential common shares were excluded from diluted EPS for the year ended June 30, 2018 because they were anti-dilutive: 61,286 related to the Company's unvested PSAs, 237,657 related to the Company's unvested RS awards, and 3,568 related to outstanding stock options.

T. DERIVATIVE FINANCIAL INSTRUMENTS

The Company reports all derivative instruments on its consolidated balance sheets at fair value and establishes criteria for designation and effectiveness of transactions entered into for hedging purposes.

As a global organization, the Company faces exposure to market risks, such as fluctuations in foreign currency exchange rates, interest rates and commodity prices. To manage the volatility relating to these exposures, the Company enters into various derivative instruments from time to time under its risk management policies. The Company designates derivative instruments as hedges on a transaction basis to support hedge accounting. The changes in fair value of these hedging instruments offset in part or in whole corresponding changes in the fair value or cash flows of the underlying exposures being hedged. The Company assesses the initial and ongoing effectiveness of its hedging relationships in accordance with its policy. The Company does not purchase, hold or sell derivative financial instruments for trading purposes. The Company's practice is to terminate derivative transactions if the underlying asset or liability matures or is sold or terminated, or if it determines the underlying forecasted transaction is no longer probable of occurring.

Interest Rate Swaps Designated as Cash Flow Hedges

The primary purpose of the Company's cash flow hedging activities is to manage the potential changes in value associated with interest payments on the Company's LIBOR-based indebtedness. The Company records gains and losses on interest rate swap contracts qualifying as cash flow hedges in accumulated other comprehensive loss to the extent that these hedges are effective and until the Company recognizes the underlying transactions in net earnings, at which time these gains and losses are recognized in interest expense on its consolidated statements of operations and comprehensive income. Cash flows from derivative financial instruments are classified as cash flows from financing activities on the consolidated statements of cash flows. These contracts generally have original maturities of greater than 12 months.

Net unrealized after-tax losses related to cash flow hedging activities that were included in accumulated other comprehensive loss were $509 and $0 for the years ended June 30, 2019 and 2018, respectively. The unrealized amounts in accumulated other comprehensive loss will fluctuate based on changes in the fair value of open contracts during each reporting period.

The Company estimates that $122 of net unrealized losses related to cash flow hedging activities included in accumulated other comprehensive loss will be reclassified into earnings within the next twelve months.

Foreign Currency Forward Contracts Not Designated as Hedges

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 consolidated statement of operations and comprehensive income 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 2019 and 2018 was the euro. The Company had no outstanding forward exchange contracts at June 30, 2019 or at June 30, 2018.

Other Derivative Instruments

The Company does not utilize commodity price hedges to manage commodity price risk exposure. Likewise, the Company does not hedge the translation exposure represented by the net assets of its foreign subsidiaries.

Fair Value of Derivative Instruments

The Company's interest rate swaps and foreign currency forward contracts are recorded at fair value on the consolidated balance sheets using a discounted cash flow analysis that incorporates observable market inputs. These market inputs include foreign currency spot and forward rates, and various interest rate curves, and are obtained from pricing data quoted by various banks, third-party sources and foreign currency dealers involving identical or comparable instruments (Level 2).

Counterparties to these foreign currency forward contracts have at least an investment grade rating. Credit ratings on some of the Company's counterparties may change during the term of the financial instruments. The Company closely monitors its counterparties' credit ratings and, if necessary, will make any appropriate changes to its financial instruments. The fair value generally reflects the estimated amounts that the Company would receive or pay to terminate the contracts at the reporting date.

The fair value of derivative instruments included in the consolidated balance sheets at June 30 were as follows:

	Balance Sheet Location	2019	2018
Derivatives designated as hedges:			
Interest rate swaps	Accrued liabilities	$ 122	$ –
Interest rate swaps	Other long-term liabilities	544	–

The impact of the Company's derivative instruments on the consolidated statement of operations and comprehensive income for the years ended June 30 was as follows:

	Statement of Comprehensive Income Location	2019	2018
Derivatives designated as hedges:			
Interest rate swaps	Interest expense	$ 1	$ –
Interest rate swaps	Unrealized loss on cash flow hedge	(509)	–
Derivatives not designated as hedges:			
Foreign currency forward contracts	Other income (expense), net	4	(65)

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

for the years ended June 30, 2019 and 2018 (in thousands)

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

Description	Balance at Beginning of Period	Charged to Costs and Expenses	Deductions[1]	Balance at End of Period
2019				
Allowance for losses on accounts receivable	$ 1,478	$ 236	$ 132	$ 1,582
Deferred tax valuation allowance	$ –	$ –	$ –	$ –
2018				
Allowance for losses on accounts receivable	$ 1,519	$ 280	$ 321	$ 1,478
Deferred tax valuation allowance	$ 3,803	$ –	$ 3,803	$ –

EXHIBIT INDEX

TWIN DISC, INCORPORATED
10-K for Year Ended June 30, 2019

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 May 1, 2019 (Incorporated by reference to Exhibit 3.1 of the Company's Form 8-K dated May 3, 2019). File No. 001-07635.	
Exhibit 10	Material Contracts	Included Herewith
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 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.	
c)	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.	
d)	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.	
e)	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.	
f)	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.	
g)	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.	
h)	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.	
i)	Form of Restricted Stock Unit Grant Agreement for restricted stock units granted 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.	
j)	Form of Performance Stock Award Grant Agreement for award of performance shares on August 24, 2018 (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated August 28, 2018). File No. 001-07635.	
k)	Form of Restricted Stock Unit Grant Agreement for restricted stock units granted on August 24, 2018 (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated August 28, 2018). File No. 001-07635.	
l)	Form of Restricted Stock Award Grant Agreement for restricted stock grants on May 1, 2019 (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated May 3, 2019). File No. 001-07635.	
m)	Form of Performance Stock Award Grant Agreement for award of performance shares on May 1, 2019 (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated May 3, 2019). File No. 001-07635.	
n)	Form of Performance Stock Award Grant Agreement for award of performance shares on August 1, 2019 (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated August 7, 2019). File No. 001-07635.	
o)	Form of Restricted Stock Award Grant Agreement for restricted stock grants on August 1, 2019 (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated August 7, 2019). File No. 001-07635.	
p)	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.	

q) 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.

r) 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.

s) 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.

t) 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.

u) 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.

v) 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.

w) 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.

x) 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.

y) 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.

z) 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.

aa) 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.

bb) First Amendment to June 29, 2018 Credit Agreement between Twin Disc, Incorporated and BMO Harris Bank, N.A. (Incorporated by reference to Exhibit 1.2 of the Company's Form 8-K dated September 21, 2018). File No. 001-07635.

cc) Amendment No. 2 to June 29, 2018 Credit Agreement between Twin Disc, Incorporated and BMO Harris Bank, N.A. (Incorporated by reference to Exhibit 1.1 of the Company's Form 8-K dated March 6, 2019). File No. 001-07635.

dd) Amended and Restated Term Note between Twin Disc, Incorporated and BMO Harris Bank, N.A. (Incorporated by reference to Exhibit 1.2 of the Company's Form 8-K dated March 6, 2019). File No. 001-07635.

ee) ISDA Master Agreement and Schedule, dated April 11, 2019, between Twin Disc, Incorporated and Bank of Montreal (Incorporated by reference to Exhibit 10.1 of the Company's Form 8-K dated April 26, 2019). File No. 001-07635.

ff) Confirmation of swap transaction, dated April 22, 2019, from Bank of Montreal to Twin Disc, Incorporated (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated April 26, 2019). File No. 001-07635.

Exhibit	Description	Included Herewith
21	Subsidiaries of Registrant	X
23a	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
101.INS	XBRL Instance Document, filed herewith	
101.SCH	XBRL Schema Document, filed herewith	
101.CAL	XBRL Calculation Linkbase Document, filed herewith	
101.DEF	XBRL Definition Linkbase Document, filed herewith	
101.LAB	XBRL Label Linkbase Document, filed herewith	
101.PRE	XBRL Presentation Linkbase, filed herewith	

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 29, 2019 TWIN DISC, INCORPORATED

By: /s/ JOHN H. BATTEN
John H. Batten
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 29, 2019 By: /s/ DAVID B. RAYBURN
David B. Rayburn
Chairman of the Board

August 29, 2019 By: /s/ JOHN H. BATTEN
John H. Batten
Chief Executive Officer

August 29, 2019 By: /s/ JEFFREY S. KNUTSON
Jeffrey S. Knutson
Vice President – Finance, Chief Financial Officer, Treasurer and Secretary

August 29, 2019 By: /s/ DEBBIE A. LANGE
Debbie A. Lange
Corporate Controller (Chief Accounting Officer)

August 29, 2019 Michael Doar, Director
Janet P. Giesselman, Director
David W. Johnson, Director
Michael C. Smiley, 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 21

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. Twin Disc Japan (a Japanese corporation)
8. Twin Disc Power Transmission Private, Ltd. (an Indian limited liability corporation)
9. Twin Disc Power Transmission (Shanghai) Co. Ltd. (a Chinese corporation)
10. Twin Disc Netherlands Holdings B.V. (a Netherlands corporation)
11. Twin Disc NL Holding B.V. (a Netherlands corporation)
12. Veth Propulsion Holding B.V. (a Netherlands corporation)
13. Veth Propulsion B.V. (a Netherlands corporation)
14. 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 consent to the incorporation by reference in the Registration Statements (Nos. 333-99229, 333-119770, 333-169965, 333-169963, 333-169962 and 333-228245) on Form S-8 and (No. 333-227130) on Form S-3 of Twin Disc, Incorporated of our reports dated August 29, 2019, relating to the consolidated financial statements and the financial statement schedule, and the effectiveness of internal control over financial reporting of Twin Disc, Incorporated, appearing in this Annual Report on Form 10-K of Twin Disc, Incorporated for the year ended June 30, 2019.

/s/ RSM US LLP
Milwaukee, Wisconsin
August 29, 2019

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, 2019 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 a s 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

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

/s/ MICHAEL C. SMILEY
Michael C. Smiley, Director

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

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

August 1, 2019

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 29, 2019

By: /s/ JOHN H. BATTEN
John H. Batten
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 29, 2019

By: /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, 2019, as filed with the Securities and Exchange Commission as of the date hereof (the "Report"), I, John H. Batten, 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 29, 2019

By: /s/ JOHN H. BATTEN
John H. Batten
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, 2019, 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, 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 29, 2019

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

STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)	2019	2018*	2017	2016	2015
Net sales	$ 302,663	$ 240,733	$ 168,182	$ 166,282	$ 265,790
Cost and expenses**	284,165	224,585	177,160	190,878	250,304
Income (loss) from operations	18,498	16,148	(8,978)	(24,596)	15,486
Other income (expense)	(3,991)	(1,728)	(551)	(699)	414
Income (loss) before income taxes and noncontrolling interest	14,507	14,420	(9,529)	(25,295)	15,900
Income taxes	3,711	4,773	(3,414)	(12,282)	4,515
Noncontrolling interest	(123)	(119)	(179)	(91)	(212)
Net income (loss) attributable to Twin Disc	10,673	9,528	(6,294)	(13,104)	11,173
BALANCE SHEETS					
Assets					
Cash	$ 12,362	$ 15,171	$ 16,367	$ 18,273	$ 22,936
Accounts receivable, net	44,013	45,422	31,392	25,363	43,883
Inventories	125,893	84,001	66,193	66,569	80,241
Other current assets	20,101	14,675	15,482	14,830	22,770
Total current assets	202,369	159,269	129,434	125,035	169,830
Goodwill and other assets	73,243	26,504	33,252	37,222	23,605
Property, plant and equipment, net	71,258	55,467	48,212	51,665	56,427
Total assets	346,870	241,240	210,898	213,922	249,862
Liabilities and equity					
Current liabilities	$ 73,077	$ 62,344	$ 44,523	$ 36,131	$ 57,054
Long-term debt	40,491	4,824	6,323	8,501	10,231
Deferred liabilities	50,484	30,456	36,485	52,237	42,410
Total equity	182,216	142,997	122,921	116,490	139,528
Noncontrolling interest	602	619	646	563	639
Total liabilities and equity	346,870	241,240	210,898	213,922	249,862
COMPARATIVE FINANCIAL INFORMATION					
Per share statistics					
Basic income (loss)	$ 0.84	$ 0.82	$ (0.56)	$ (1.17)	$ 0.99
Diluted income (loss)	0.83	0.82	(0.56)	(1.17)	0.99
Dividends	–	–	–	0.18	0.36
Total equity	14.49	12.66	10.94	10.40	12.38
Return on equity	5.9%	6.7%	-5.1%	-11.2%	8.0%
Return on assets	3.1%	3.9%	-3.0%	-6.1%	4.5%
Return on sales	3.5%	4.0%	-3.7%	-7.9%	4.2%
Average basic shares outstanding	12,571,013	11,294,914	11,239,474	11,202,752	11,273,697
Average diluted shares outstanding	12,681,574	11,395,072	11,239,474	11,202,752	11,277,364
Number of shareholder accounts	415	435	484	512	530
Number of employees	873	696	672	742	921
Additions to property, plant and equipment	$11,979	$6,328	$3,133	$4,214	$9,049
Depreciation	6,682	6,315	6,849	8,682	9,922
Net working capital	129,292	96,925	84,911	88,904	112,776

* Certain amounts in fiscal year 2018 have been restated to conform with recently issued accounting guidance that were effective at the beginning of fiscal 2019. See the notes to the financial statements.
** Includes marketing, engineering and administrative

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twindisc.com