BORGWARNER INC
Form 4
May 01, 2009

FORM 4

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. *See* Instruction 1(b).

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL

OMB Number:	3235-0287
Expires:	January 31, 2005
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(Print or Type Responses)

1. Name and Address of Reporting Person *
BONANNO PHYLLIS O

(Last) (First) (Middle)

3850 HAMLIN RD.

(Street)

AUBURN HILLS, MI 48326

(City) (State) (Zip)

2. Issuer Name **and** Ticker or Trading Symbol
BORGWARNER INC [BWA]

3. Date of Earliest Transaction (Month/Day/Year)
04/29/2009

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

__X__ Director _____ 10% Owner
_____ Officer (give title below) _____ Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)
_X_ Form filed by One Reporting Person
___ Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1.Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
common stock	04/29/2009	(1)	A		9,289	A	$ 0	49,743	D	

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474 (9-02)

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(*e.g.*, puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Underlying Securities (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Nu Deriv Secur Bene Owne Follo Repo Trans (Instr
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares		

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
BONANNO PHYLLIS O 3850 HAMLIN RD. AUBURN HILLS, MI 48326	X			

Signatures

John J. Gasparovic as attorney-in-fact for Phyllis Bonnano	05/01/2009
**Signature of Reporting Person	Date

Explanation of Responses:

* If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) 1/3 of the restrictions will expire on the first three anniversaries from the date of grant.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.
Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number. uments--The Company has written policies and procedures that place all financial instruments under the direction of the Company’s corporate treasury department and restrict all derivative transactions to those intended for hedging purposes. The use of financial instruments for trading purposes is prohibited. The Company uses financial instruments to manage the market risk from changes in foreign exchange rates.

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Periodically, the Company enters into forward exchange contracts to reduce the earnings and cash flow impact of non-functional currency denominated receivables and payables. These contracts are highly effective in hedging the cash flows attributable to changes in currency exchange rates. Gains and losses resulting from these contracts offset the foreign exchange gains or losses on the underlying assets and liabilities being hedged. The maturities of the forward exchange contracts generally coincide with the settlement dates of the related transactions. Gains and losses on these contracts are recorded in other income (expense) as the changes in the fair value of the contracts are recognized and generally offset the gains and losses on the hedged items in the same period. The primary currency to which the Company was exposed in fiscal 2017 and 2016 was the euro. At June 30, 2017, one of the Company’s foreign subsidiaries had three outstanding forward exchange contracts to purchase U.S. dollars in the notional value of $1,050 with a weighted average maturity of 53 days. The fair value of the Company’s contract was a loss of $29 at June 30, 2017. The Company had no outstanding forward exchange contracts at June 30, 2016.

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

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

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

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

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

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

The Company conducted interim qualitative assessments throughout the year, and its annual assessment for goodwill impairment as of June 30, 2017 and 2016 using updated inputs, including appropriate risk-based, country and company specific weighted average discount rates for the Company’s reporting units. As further described in Note D, these assessments resulted in the Company recognizing goodwill impairment charges in fiscal 2017 and 2016.

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, 2017 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.

Deferred Taxes--The Company recognizes deferred tax liabilities and assets for the expected future income tax consequences of events that have been recognized in the Company’s financial statements. Under this method, deferred tax liabilities and assets are determined based on the temporary differences between the financial statement carrying amounts and the tax bases of assets and liabilities using enacted tax rates in effect in the years in which temporary differences are expected to reverse. Valuation allowances are provided for deferred tax assets where it is considered more likely than not that the Company will not realize the benefit of such assets.

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

As more fully discussed in Recently Issued Accounting Standards, the Company expects to adopt ASU 2014-09 in fiscal 2019. Under the new guidance, the Company’s timing of recognizing revenue may change.

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.

Out-of-Period Adjustments--During the third quarter of fiscal 2015, the Company recorded an out-of-period adjustment for the correction of an error related to tax expense. More specifically, the Company understated tax expense by $175 for the year ended June 30, 2014. The impact of the correction of this error was to decrease net earnings by $175 for the fiscal year ended June 30, 2015. The Company does not believe this error is material to its financial statements for any prior period, nor that the correction of these errors was material to the year ended June 30, 2015, or any of the quarters therein.

During the fourth quarter of fiscal 2015, the Company recorded an out-of-period adjustment to correct an error related to an understatement of its accrued retirement benefits for certain of its international benefit plans that contain minimum return guarantees of approximately $470. The impact of this correction was to increase comprehensive loss by $470. The Company does not believe this error is material to its financial statements for any prior period, nor that the correction of this error is material to the year ended June 30, 2015.

Recently Issued Accounting Standards

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

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

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

In March 2016, the FASB issued updated guidance (ASU 2016-09) intended to simplify several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The amendments in this guidance are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2016 (the Company’s fiscal 2018), with early adoption permitted. The Company is currently evaluating the potential impact of this guidance on the Company’s financial statements and disclosures.

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

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

The Company is continuing its assessment, including the potential operational process changes as a result of the new guidance. It plans to early-adopt the guidance, using the modified retrospective approach, to coincide with its adoption of the new revenue recognition guidance, which is the first quarter of fiscal 2019.

In July 2015, the FASB issued guidance (ASU 2015-11) intended to simplify the measurement of inventory and to closely align with International Financial Reporting Standards. Current guidance requires inventories to be measured at the lower of cost or market. Under this new guidance, inventories other than those measured under last in first out ("LIFO") are to be measured at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. This guidance is to be applied prospectively, and is effective for fiscal years beginning after December 15, 2016 (the Company's fiscal 2018). The adoption of this guidance is not expected to have a material impact on the Company's financial statements and disclosures.

In August 2014, the FASB issued updated guidance (ASU 2014-15) intended to define management's responsibility to evaluate whether there is substantial doubt about an organization's ability to continue as a going concern. The amendments in this guidance are effective for annual periods ending after December 15, 2016 (the Company's fiscal 2017), and for annual periods and interim periods thereafter. The Company adopted this guidance as of June 30, 2017 and it did not have an impact on the Company's financial statements and disclosures.

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

In preparation for the adoption of this guidance, the Company gathered customer contracts and customer purchase orders of its various locations to assess whether there are separate and distinct performance obligations, as defined by ASU 2014-09, within these agreements. The assessment has included interviews with various functions, including sales, engineering, customer service, and finance, to further analyze those performance obligations, both explicit and implicit (particularly as they relate to services). Under this ASU, revenue is recognized when or as each performance obligation is satisfied. Based upon the preliminary findings, the Company has identified indicators that suggest a deferral of revenue may be required for certain agreements where the performance of services after product delivery may be required. In certain agreements where the products are built to customer specifications, revenue may need to be accelerated. The Company is continuing its assessment, including whether or not these obligations are perfunctory or material to the financial statements. It plans to adopt the guidance on the effective date applicable to the Company, which is the first quarter of fiscal 2019. There are two transition methods available under the new standard, either full retrospective or modified retrospective. The Company has not yet determined which transition method it will use.

B. INVENTORIES

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

	2017	2016
Finished parts	$45,829	$45,622
Work in process	8,358	8,020
Raw materials	12,006	12,927
	$66,193	$66,569

Inventories stated on a LIFO basis represent approximately 36% and 33% of total inventories at June 30, 2017 and 2016, respectively. The approximate current cost of the LIFO inventories exceeded the LIFO cost by $26,422 and $26,451 at June 30, 2017 and 2016, respectively. The Company had reserves for inventory obsolescence of $9,068 and $8,823 at June 30, 2017 and 2016, respectively.

C. PROPERTY, PLANT AND EQUIPMENT

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

	2017	2016
Land	$6,556	$6,497
Buildings	46,479	45,808
Machinery and equipment	134,039	132,969
	187,074	185,274
Less: accumulated depreciation	(138,862)	(133,609)
	$48,212	$51,665

Depreciation expense for the years ended June 30, 2017, 2016 and 2015 was $6,849, $8,682 and $9,922, respectively.

D. GOODWILL AND OTHER INTANGIBLES

Goodwill

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

As of June 30, 2016, the goodwill impairment test involved a two-step process. In step one, the fair value of each of the reporting units is compared to its carrying value, including the goodwill allocated to the reporting unit. If the fair value of the reporting unit exceeds its carrying value, there is no indication of impairment and no further testing is required. If the fair value of the reporting unit is less than the carrying value, step two of the impairment test is performed to measure the amount of impairment loss, if any. In step two of the test, the fair value of the reporting unit’s assets and liabilities (both recognized and unrecognized intangible assets) are measured in accordance with ASC 805, “Business Combinations”, in a hypothetical purchase transaction and compared to the fair value of the reporting unit in order to calculate the implied fair value of goodwill in the same manner as if the reporting unit was being acquired in a business combination. If the implied fair value of the reporting unit’s goodwill is less than the carrying value, the difference is recorded as an impairment loss.

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.

The Company experienced sustained declines in operating results across the business during fiscal 2016, which resulted from weak market trends in the Company’s global oil and gas and commercial marine markets, an underperforming European economy, and few signs of significant near-term recovery in the markets served by these reporting units. The Company conducted its annual assessment for goodwill impairment as of June 30, 2016 using updated inputs, including appropriate risk-based, country and company specific weighted average discount rates for all of the Company’s reporting units, which had increased from the prior year to 13.1% for the U.S. Industrial business as a result of the macroeconomic trends and the Company’s forecasted cash flows. The assessment resulted in the U.S. Industrial and European Propulsion reporting units failing step one of the impairment test. The Company then performed step two testing for each of the reporting units. The conclusions were that the U.S. Industrial reporting unit required an impairment charge of $6,391, and the European Propulsion reporting unit required a full impairment charge of $1,211. The fair value of the European Industrial reporting unit exceeded its carrying value by 31% and therefore no impairment charge was required for this reporting unit.

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

The 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.

For the quarter ended March 31, 2017, the Company performed a review of potential triggering events, and concluded there were no triggering events that indicated that the fair value of its European Industrial reporting unit had declined to below its carrying value at March 31, 2017. However, as the review pertained to its U.S. Industrial reporting unit, the Company concluded that events have occurred during the quarter that were indicative that the fair value of the U.S. Industrial reporting unit had more likely than not declined to below its carrying value at March 31, 2017. Such events included the decline in the industry outlook, as well as the underperformance of this reporting unit relative to its forecasted sales and prior period performance.

In accordance with ASU 2017-04, the Company performed an impairment test using current assumptions, including updated forecasted cash flows and a company specific discount rate of 13.1%, for the U.S. Industrial reporting unit and concluded that it required an impairment charge of $2,550 to fully write off its remaining goodwill balance.

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

	Net Book Value Rollforward			Net Book Value By Reporting Unit			
	Gross Carrying Amount	Accumulated Impairment	Net Book Value	U.S. Industrial	European Industrial	European Propulsion	Other
Balance at June 30, 2015	$16,459	$ (3,670)	$12,789	$8,941	$ 2,542	$ 1,281	$ 25
Sale of business	(25)	-	(25)	-	-	-	(25)
Impairment	-	(7,602)	(7,602)	(6,391)	-	(1,211)	-
Translation adjustment	(42)	-	(42)	-	28	(70)	-
Balance at June 30, 2016	16,392	(11,272)	5,120	2,550	2,570	-	-
Impairment	-	(2,550)	(2,550)	(2,550)	-	-	-
Translation adjustment	15	-	15	-	15		
Balance at June 30, 2017	$16,407	$ (13,822)	$2,585	$-	$ 2,585	$ -	$ -

The total non-cash impairment charges of $2,550 and $7,602 in fiscal 2017 and 2016, respectively, do not result in any future cash expenditures, impact liquidity, affect the ongoing business or financial performance of the Company, impact compliance with our lending arrangements, or reduce borrowing capacity.

As at June 30, 2017, the balance of goodwill of $2,585 is carried in the European Industrial reporting unit. The fair value of the European Industrial reporting unit exceeded its carrying value by 57% and therefore no impairment charge was required for this reporting unit.

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	Accumulated Amortization	Net Book	Licensing agreements	Trade Name	Other

	Carrying Amount	/ Impairment	Value			
Balance at June 30, 2015	$13,272	$ (11,299)	$1,973	$510	$1,459	$4
Addition	138		138			138
Amortization		(164)	(164)	(60)	(81)	(23)
Translation adjustment	16		16		15	1
Balance at June 30, 2016	13,426	(11,463)	1,963	450	1,393	120
Amortization		(168)	(168)	(60)	(80)	(28)
Translation adjustment	10	(1)	9		6	3
Balance at June 30, 2017	$13,436	$ (11,632)	$1,804	$390	$1,319	$95

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

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

Intangible amortization expense for the years ended June 30, 2017, 2016 and 2015 was $168, $165 and $239, respectively. Estimated intangible amortization expense for each of the next five fiscal years is as follows:

Fiscal Year	
2018	$180
2019	177
2020	156
2021	150
2022	143
Thereafter	997

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Explanation of Responses:

The gross carrying amount of the Company's intangible assets that have indefinite lives and are not subject to amortization as of June 30, 2017 and 2016 are $205 and $201, respectively. These assets are comprised of acquired tradenames.

E. ACCRUED LIABILITIES

Accrued liabilities at June 30 were as follows:

	2017	**2016**
Salaries and wages	$6,714	$4,851
Retirement benefits	3,027	3,550
Customer advances/deferred revenue	2,423	2,372
Distributor rebate	2,183	2,538
Warranty	1,708	2,532
Other	7,167	5,572
	$23,222	$21,415

F. WARRANTY

The Company warrants all assembled products, parts (except component products or parts on which written warranties are issued by the respective manufacturers thereof and are furnished to the original customer, as to which the Company makes no warranty and assumes no liability) and service against defective materials or workmanship. Such warranty generally extends from periods ranging from 12 months to 24 months. The Company engages in extensive product quality programs and processes, including actively monitoring and evaluating the quality of its suppliers. However, its warranty obligation is affected by product failure rates, the number of units affected by the failure and the expense involved in satisfactorily addressing the situation. The warranty reserve is established based on our best estimate of the amounts necessary to settle future and existing claims on products sold as of the balance sheet date. When evaluating the adequacy of the reserve for warranty costs, management takes into consideration the term of the warranty coverage, historical claim rates and costs of repair, knowledge of the type and volume of new products and economic trends. While we believe the warranty reserve is adequate and that the judgment applied is appropriate, such amounts estimated to be due and payable in the future could differ materially from what actually transpires. The following is a listing of the activity in the warranty reserve during the years ended June 30:

	2017	2016
Reserve balance, July 1	$3,607	$5,245
Current period expense	615	646

Payments or credits to customers	(2,179)	(2,278)
Translation adjustment	19	(6)
Reserve balance, June 30	$2,062	$3,607

The current portion of the warranty accrual ($1,708 and $2,532 for fiscal 2017 and 2016, respectively) is reflected in accrued liabilities, while the long-term portion ($354 and $1,075 for fiscal 2017 and 2016, respectively) is included in other long-term liabilities on the Consolidated Balance Sheets.

G. DEBT

Long-term Debt:

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

	2017	2016
Revolving loan agreement	$6,285	$8,478
Other	38	23
Subtotal	6,323	8,501
Less: current maturities	-	-
Total long-term debt	$6,323	$8,501

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The revolving loan agreement as of June 30, 2017 pertains to the revolving loan facility which the Company entered into on April 22, 2016 with Bank of Montreal (the "BMO Agreement"). The BMO Agreement is secured by substantially all of the Company's personal property, including accounts receivable, inventory, and certain machinery and equipment of its primary manufacturing facility in Racine, Wisconsin, and the personal property of Mill-Log Equipment Co., Inc., a wholly-owned domestic subsidiary of the Company. The BMO Agreement provides for a borrowing base calculation to determine borrowing capacity. This capacity will be based upon eligible domestic inventory, eligible accounts receivable and machinery and equipment, subject to certain adjustments. As of June 30, 2017, the Company's borrowing capacity under the terms of the BMO Agreement was approximately $28,580, and the Company had approximately $21,365 of available borrowings. As of June 30, 2017, the interest rate under this agreement was 2.80%.

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

Fiscal Year	
2018	$2
2019	3
2020	3
2021	6,288
2022	3
Thereafter	24
	$6,323

Other lines of credit:

The Company has established unsecured lines of credit, which may be withdrawn at the option of the banks. Under these arrangements, the Company has unused and available credit lines of $1,472 with a weighted average interest rate of 4.9% as of June 30, 2017, and $1,470 with a weighted average interest rate of 5.4% as of June 30, 2016.

H. LEASE COMMITMENTS

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

Fiscal Year	
2018	$2,435

2019	859
2020	597
2021	515
2022	484
Thereafter	238
	$5,128

Total rent expense for operating leases approximated $2,982, $3,240 and $3,550 in fiscal 2017, 2016 and 2015, respectively.

I. SHAREHOLDERS' EQUITY

The total number of shares of common stock outstanding at June 30, 2017, 2016 and 2015 was 11,519,133, 11,350,174 and 11,267,347, respectively. At June 30, 2017, 2016 and 2015, treasury stock consisted of 1,580,335, 1,749,294 and 1,832,121 shares of common stock, respectively. The Company issued 168,959, 83,377 and 49,314 shares of treasury stock in fiscal 2017, 2016 and 2015, respectively, to fulfill its obligations under the stock option plans and restricted stock grants. The Company also recorded forfeitures of 0 and 1,750 shares of previously issued restricted stock in fiscal 2017 and 2016, respectively. The difference between the cost of treasury shares and the option price is recorded in common stock.

Under an authorization given by the Board of Directors on July 27, 2012, the Company is permitted to make open market purchases of its common stock. The Company did not make any open market purchases during the three most recent fiscal years. As of June 30, 2017, 2016, and 2015, 315,000 shares remain authorized for purchase.

Cash dividends per share were $0.00, $0.18 and $0.36 in fiscal 2017, 2016 and 2015, respectively.

Effective June 30, 2008, the Company's Board of Directors established a Shareholder Rights Plan and distributed to shareholders one preferred stock purchase right (a "Right') for each outstanding share of common stock. This Shareholder Rights Plan was amended on May 1, 2012. Under certain circumstances, a Right can be exercised to purchase one four-hundredth of a share of Series A Junior Preferred Stock at an exercise price of $125, subject to certain anti-dilution adjustments. The Rights will become exercisable on the earlier of: (i) ten business days following a public announcement that a person or group of affiliated or associated persons (an "Acquiring Person") has acquired, or obtained the right to acquire from shareholders, beneficial ownership of 20% or more of the outstanding Company's common stock (or 30% or more in the case of any person or group which currently owns 20% or more of the shares or who shall become the beneficial owner of 20% or more of the shares as a result of any transfer by reason of the death of or by gift from any other person who is an affiliate or an associate of such existing holder or by succeeding such a person as trustee of a trust existing on the Record Date ("Existing Holder")) or (ii) ten business days following the commencement of a tender offer or exchange offer that would result in a person or group beneficially owning 20% or more of such outstanding Common Stock (or 30% or more for an Existing Holder), as such periods may be extended pursuant to the Rights Agreement. In the event that any person or group becomes an Acquiring Person, each holder of a Right shall thereafter have the right to receive, upon exercise, in lieu of Preferred Stock, common stock of the Company having a value equal to two times the exercise price of the Right. However, Rights are not exercisable as described in this paragraph until such time as the Rights are no longer redeemable by the Company as set forth below. Notwithstanding any of the foregoing, if any person becomes an Acquiring Person all Rights that are, or (under certain circumstances specified in the Rights Agreement) were, beneficially owned by an Acquiring Person will become null and void.

The Rights will expire at the close of business on June 30, 2018, unless earlier redeemed or exchanged by the Company. At any time before a person becomes an Acquiring Person, the Company may redeem the Rights in whole, but not in part, at a price of $.01 per Right, appropriately adjusted to reflect any stock split, stock dividend or similar transaction occurring after the date hereof. Immediately upon the action of the Board of Directors ordering redemption of the Rights, the Rights will terminate and the only right of the holders of Rights will be to receive the $.01 redemption price.

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 for the purpose of the Shareholder Rights Plan.

The components of accumulated other comprehensive loss included in equity as of June 30, 2017 and 2016 are as follows:

	2017	2016
Translation adjustments	$6,130	$5,158

Benefit plan adjustments, net of income taxes of $21,601 and $27,750 respectively	(38,801)	(49,301)
Accumulated other comprehensive loss	$(32,671)	$(44,143)

A reconciliation for the changes in accumulated other comprehensive income (loss), net of tax, by component for the years ended June 30, 2015, June 30, 2016 and June 30, 2017 is as follows:

	Translation Adjustment	Benefit Plan Adjustment
Balance at June 30, 2014	$ 20,779	$ (36,722)
Other comprehensive loss before reclassifications	(14,039)	(7,518)
Amounts reclassified from accumulated other comprehensive income	-	2,019
Net current period other comprehensive loss	(14,039)	(5,499)
Balance at June 30, 2015	$ 6,740	$ (42,221)

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

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

A reconciliation for the reclassifications out of accumulated other comprehensive income (loss), net of tax for the year ended June 30, 2015 is as follows:

	Amount Reclassified
Amortization of benefit plan items	
Actuarial losses	$ (3,074)
Transition asset and prior service benefit	(36)
Total before tax benefit	(3,110)
Tax benefit	1,091
Total reclassification net of tax	$ (2,019)

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

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

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

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

J. BUSINESS SEGMENTS AND FOREIGN OPERATIONS

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

Net sales by product group is summarized as follows:

	2017	2016	2015
Industrial	$28,769	$32,437	$42,078
Land based transmissions	42,386	29,028	76,450
Marine and propulsion systems	91,629	98,925	141,137
Other	5,398	5,892	6,125
Total	$168,182	$166,282	$265,790

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, controls, surface drives, propellers and boat management systems for the global commercial, pleasure craft and patrol boat markets. Other products 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:

2017	Manufacturing	Distribution	Total
Net Sales	$ 146,491	$ 67,804	$214,295
Intra-segment sales	13,146	7,296	20,442
Inter-segment sales	22,921	2,750	25,671
Interest income	42	32	74
Interest expense	301	-	301
Income taxes	1,684	784	2,468
Depreciation and amortization	6,125	425	6,550
Net earnings attributable to Twin Disc	629	2,438	3,067
Assets	222,136	50,418	272,554
Expenditures for segment assets	2,674	290	2,964

2016	Manufacturing	Distribution	Total

Net Sales	$ 140,965	$ 74,199	$215,164
Intra-segment sales	11,476	7,854	19,330
Inter-segment sales	26,883	2,669	29,552
Interest income	117	25	142
Interest expense	397	1	398
Income taxes	(2,554)	108	(2,446)
Depreciation and amortization	7,536	471	8,007
Net (loss) earnings attributable to Twin Disc	(12,694)	762	(11,932)
Assets	221,590	52,719	274,309
Expenditures for segment assets	3,850	188	4,038

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2015	Manufacturing	Distribution	Total
Net Sales	$ 232,545	$ 120,594	$353,139
Intra-segment sales	19,541	9,584	29,125
Inter-segment sales	54,947	3,277	58,224
Interest income	171	33	204
Interest expense	946	-	946
Income taxes	7,125	1,646	8,771
Depreciation and amortization	8,103	502	8,605
Net earnings attributable to Twin Disc	12,861	6,350	19,211
Assets	246,374	62,134	308,508
Expenditures for segment assets	7,335	1,271	8,606

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

	2017	**2016**	**2015**
Net sales:			
Total net sales from reportable segments	$214,295	$215,164	$353,139
Elimination of inter-company sales	(46,113)	(48,882)	(87,349)
Total consolidated net sales	$168,182	$166,282	$265,790
Net (loss) earnings attributable to Twin Disc:			
Total net earnings (loss) from reportable segments	$3,067	$(11,932)	$19,211
Other adjustments and corporate expenses	(9,361)	(1,172)	(8,038)
Total consolidated net (loss) earnings attributable to Twin Disc	$(6,294)	$(13,104)	$11,173

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.

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Other significant items:

	Segment Totals	Adjustments	Consolidated Totals
2017			
Interest income	$74	$ (2)	$ 72
Interest expense	301	2	303
Income taxes	2,468	(5,882)	(3,414)
Depreciation and amortization	6,550	467	7,017
Assets	272,554	(61,656)	210,898
Expenditures for segment assets	2,964	169	3,133
2016			
Interest income	$142	$ 5	$ 147
Interest expense	398	28	426
Income taxes	(2,446)	(9,836)	(12,282)
Depreciation and amortization	8,007	840	8,847
Assets	274,309	(60,387)	213,922
Expenditures for segment assets	4,038	176	4,214
2015			
Interest income	$204	$ (80)	$ 124
Interest expense	946	(340)	606
Income taxes	8,771	(4,256)	4,515
Depreciation and amortization	8,605	1,556	10,161
Assets	308,508	(58,646)	249,862
Expenditures for segment assets	8,606	443	9,049

All adjustments represent inter-company eliminations and corporate amounts.

Geographic information about the Company is summarized as follows:

	2017	2016	2015
Net sales			
United States	$82,730	$77,147	$131,198
Italy	12,176	13,294	14,457
Australia	10,913	9,943	10,454
Canada	9,962	8,699	13,661
China	7,936	9,019	19,712
Other countries	44,465	48,180	76,308
Total	$168,182	$166,282	$265,790

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

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

Long-lived assets	**2017**	**2016**
United States	$34,310	$37,319
Belgium	7,399	7,154
Switzerland	7,324	7,145
Italy	1,829	1,638
Other countries	1,810	2,477
Total	$52,672	$55,733

The Company has one distributor customer, primarily of our manufacturing segment, that accounted for 11% and 12% of total Company sales for fiscal 2017 and fiscal 2016, respectively. Another distributor customer accounted for 12% and 11% of total Company sales in fiscal 2016 and fiscal 2015, respectively.

K. STOCK-BASED COMPENSATION

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

Shares available for future awards as of June 30 were as follows:

	2017	**2016**
2010 Employee Incentive Plan	97,609	333,054
2010 Directors' Plan	100,426	144,656

Performance Stock Awards ("PSA")

In fiscal 2017, 2016 and 2015, the Company granted a target number of 109,598, 60,466 and 16,261 PSAs, respectively, to various employees of the Company, including executive officers. The PSAs granted in fiscal 2017 will vest if the Company achieves performance-based target objectives relating to average return on invested capital, average annual sales and average annual Earnings Per Share (“EPS”) (as defined in the PSA Grant Agreement), in the cumulative three fiscal year period ending June 30, 2019. These PSAs are subject to adjustment if the Company’s return on invested capital, net sales, and EPS for the period falls below or exceeds the specified target objective, and the maximum number of performance shares that can be awarded if the target objective is exceeded is 164,397. Based upon actual results to date and the low probability of achieving the threshold performance levels, the Company is currently not accruing compensation expense for these PSAs. The PSAs granted in fiscal 2016 will vest if the Company achieves (a) performance-based target objectives relating to average annual sales and consolidated economic profit, and (b) relative Total Shareholder Return (“TSR”) (as defined in the PSA Grant Agreement), in the cumulative three fiscal year period ending June 30, 2018. These PSAs are subject to adjustment if the Company’s net sales, economic profit and relative TSR 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 90,699. Based upon actual results to date and the low probability of achieving the threshold performance levels, the Company is currently not accruing as compensation expense for the portion of the PSAs relating to the average annual sales and economic profit measures. The Company is currently accruing compensation expense for the TSR measure. Compensation expense relating to the relative TSR portion is recognized based on the grant date fair value over the vesting period. The PSAs granted in fiscal 2015 expired on June 30, 2017. No compensation expense was recognized on these PSAs in fiscal 2017, 2016, and 2015, because the economic profit target performance level was not met. There were 170,064, 72,217 and 25,949 unvested PSAs outstanding at June 30, 2017, 2016 and 2015, 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, 2017, 2016 and 2015, related PSAs, approximated $59, $54 and $0, respectively. The weighted average grant date fair value of the unvested awards at June 30, 2017 was $12.32. At June 30, 2017, the Company had $1,981 of unrecognized compensation expense related to the unvested shares that would vest if the specified target objective was achieved for the fiscal 2017 and 2016 awards. The total fair value of performance stock awards vested in fiscal 2017, 2016 and 2015 was $0.

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Performance Stock Unit Awards ("PSU")

There were no grants of PSUs during fiscal 2017 and fiscal 2016. In fiscal 2015, the Company granted a target number of 15,861 PSUs to various employees of the Company, including executive officers. These PSUs expired unvested on June 30, 2017. No compensation expense was recognized on these PSUs in 2017, 2016, and 2015 because the economic profit target performance level was not met. There were no unvested PSUs outstanding at June 30, 2017, and there were 11,351 and 29,855 unvested PSUs outstanding at 2016 and 2015, respectively. At June 30, 2017, the Company had no unrecognized compensation expense related to PSUs. The total fair value of PSUs vested in fiscal 2017, 2016 and 2015 was $0. The PSUs are cash settled liability awards; as of June 30, 2017 and June 30, 2016, there were no awards included in liabilities.

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 2017, 2016 and 2015, the Company granted 181,828, 95,738 and 59,494 service based restricted shares, respectively, to employees and non-employee directors in each year. A total of 0, 1,750 and 46,240 shares of restricted stock were forfeited during fiscal 2017, 2016 and 2015, respectively. There were 269,584, 142,971 and 94,183 unvested shares outstanding at June 30, 2017, 2016 and 2015, respectively. Compensation expense of $1,555, $1,241 and $696 was recognized during the year ended June 30, 2017, 2016 and 2015, respectively, related to these service-based awards. The total fair value of restricted stock grants vested in fiscal 2017, 2016 and 2015 was $587, $681 and $993, respectively. As of June 30, 2017, the Company had $1,569 of unrecognized compensation expense related to restricted stock which will be recognized over the next three years.

Stock Options

The 2010 Directors' Plan may grant options to purchase shares of common stock, at the discretion of the Board of Directors, to non-employee directors who are elected or 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, 2017 and 2016.

2004 Plans

The Company has 13,200 non-qualified stock options outstanding as of June 30, 2017 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.

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Stock option transactions under the 2004 plans during 2017 were as follows:

	2017	**Weighted Average Price**	**Weighted Average Remaining Contractual Life (years)**	**Aggregate Intrinsic Value**
Non-qualified stock options:				
Options outstanding at beginning of year	16,800	$ 16.80		
Granted	-	-		
Canceled/expired	(3,600)	18.01		
Exercised	-	-		
Options outstanding at June 30	13,200	$ 16.47	2.09	$ 35.5

Options price range ($10.01 - $27.55)

In addition, the Company 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 2017, 2016 and 2015 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 2017, 2016 and 2015, respectively.

The total intrinsic value of options exercised during the years ended June 30, 2017, 2016 and 2015 was approximately $0, $4 and $55, respectively.

L. ENGINEERING AND DEVELOPMENT COSTS

Engineering and development costs include research and development expenses for new products, development and major improvements to existing products, and other costs for ongoing efforts to refine existing products. Research and development costs charged to operations totaled $1,547, $1,805 and $2,288 in fiscal 2017, 2016 and 2015, respectively. Total engineering and development costs were $8,888, $9,481 and $11,091 in fiscal 2017, 2016 and 2015, respectively.

M. PENSION AND OTHER POSTRETIREMENT BENEFIT PLANS

The Company has non-contributory, qualified defined benefit pension plans covering substantially all domestic employees hired prior to October 1, 2003, and certain foreign employees. Domestic plan benefits are based on years of service, and, for salaried employees, on average compensation for benefits earned prior to January 1, 1997, and on a cash balance plan for benefits earned from January 1, 1997 through July 31, 2009, at which time the Company froze future accruals under domestic defined benefit pension plans. The Company's funding policy for the plans covering domestic employees is to contribute an actuarially determined amount which falls between the minimum 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 2017 and 2016 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 2017	2016	Other Postretirement Benefits 2017	2016
Change in benefit obligation:				
Benefit obligation, beginning of year	$129,056	$127,733	$15,933	$16,372
Service cost	1,009	770	20	28
Interest cost	4,213	4,968	420	604
Actuarial (gain) loss	(6,980)	7,043	(3,380)	496
Contributions by plan participants	139	143	472	519
Benefits paid	(9,267)	(11,601)	(1,891)	(2,086)
Benefit obligation, end of year	$118,170	$129,056	$11,574	$15,933
Change in plan assets:				
Fair value of assets, beginning of year	$94,164	$104,681	$-	$-
Actual return on plan assets	7,967	(1,442)	-	-
Employer contribution	1,369	2,383	1,419	1,567
Contributions by plan participants	139	143	472	519
Benefits paid	(9,267)	(11,601)	(1,891)	(2,086)
Fair value of assets, end of year	$94,372	$94,164	$-	$-
Funded status	$(23,798)	$(34,892)	$(11,574)	$(15,933)
Amounts recognized in the balance sheet consist of:				
Other assets - noncurrent	$694	$654	$-	$-
Accrued liabilities - current	(706)	(805)	(1,654)	(1,969)
Accrued retirement benefits - noncurrent	(23,786)	(34,741)	(9,920)	(13,964)
Net amount recognized	$(23,798)	$(34,892)	$(11,574)	$(15,933)
Amounts recognized in accumulated other comprehensive loss consist of (net of tax):				
Net transition obligation	$790	$285	$-	$-
Actuarial net loss	37,140	45,850	871	3,166
Net amount recognized	$37,930	$46,135	$871	$3,166

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

	Pension Benefits	Other Postretirement Benefits
Net transition obligation	$ 100	$ -
Actuarial net loss	3,037	12
Net amount to be recognized	$ 3,137	$ 12

The accumulated benefit obligation for all defined benefit pension plans was approximately $118,170 and $129,056 at June 30, 2017 and 2016, respectively.

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

	June 30	
	2017	**2016**
Projected and accumulated benefit obligation	$117,250	$127,528
Fair value of plan assets	92,758	91,982

Components of Net Periodic Benefit Cost:

	Pension Benefits		
	2017	**2016**	**2015**
Service cost	$1,009	$770	$465
Interest cost	4,213	4,968	4,862
Expected return on plan assets	(5,902)	(6,874)	(7,272)
Amortization of transition obligation	35	33	36
Amortization of prior service cost	66	59	-
Amortization of actuarial net loss	3,591	3,627	2,436
Net periodic benefit cost	$3,012	$2,583	$527

	Other Postretirement Benefits		
	2017	**2016**	**2015**
Service cost	$21	$28	$30
Interest cost	420	604	579
Amortization of actuarial net loss	230	728	638
Net periodic benefit cost	$671	$1,360	$1,247

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

	Pension	**Other Postretirement Benefits**
Net gain	$(9,057)	$ (3,380)
Prior service cost	(10)	-
Amortization of transition asset	(35)	-
Amortization of prior service cost	(66)	-
Amortization of net (loss) gain	(3,613)	(230)
Total recognized in other comprehensive income	(12,781)	(3,610)

Net periodic benefit cost	3,012	671
Total recognized in net periodic benefit cost and other comprehensive income	$(9,769)	$ (2,939)

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

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

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Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income for Fiscal 2015 (Pre-tax):

	Pension	Other Postretirement Benefits
Net loss	$9,406	$ 882
Amortization of transition asset	(36)	-
Amortization of net (loss) gain	(2,436)	(638)
Total recognized in other comprehensive income	6,934	244
Net periodic benefit cost	527	1,247
Total recognized in net periodic benefit cost and other comprehensive income	$7,461	$ 1,491

Additional Information

Assumptions

Weighted average assumptions used to determine benefit obligations at June 30	Pension Benefits		Other Postretirement Benefits	
	2017	**2016**	**2017**	**2016**
Discount rate	3.51%	3.35%	3.41%	3.27%
Expected return on plan assets	6.68%	6.57%		

Weighted average assumptions used to determine net periodic benefit costs for years ended June 30	Pension Benefits			Other Postretirement Benefits		
	2017	**2016**	**2015**	**2017**	**2016**	**2015**
Discount rate	3.35%	4.05%	4.06%	3.27%	3.93%	3.76%
Expected return on plan assets	6.57%	7.11%	7.39%			

The assumed weighted-average healthcare cost trend rate was 7.25% in 2017, grading down to 5% in 2022. A 1% increase in the assumed health care cost trend would increase the accumulated postretirement benefit obligation by approximately $250 and the service and interest cost by approximately $10. A 1% decrease in the assumed health care cost trend would decrease the accumulated postretirement benefit obligation by approximately $221 and the service and interest cost by approximately $9.

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, 2017 and 2016 by asset category are as follows:

	Target	**June 30**	
Asset Category	Allocation	**2017**	**2016**
Equity securities	65%	65%	63%
Debt securities	25%	25%	25%
Real estate	10%	10%	12%
	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 $1,585.1 (1.7 percent of total plan assets) at June 30, 2017 and 98,211 shares with a fair market value of $1,054.8 (1.1 percent of total plan assets) at June 30, 2016.

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

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

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

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

	Total	**Level I**	**Level II**	**Level III**
Cash and cash equivalents	$1,203	$1,203	$ -	$-
Equity securities:				

Company common stock (a)	1,585	1,585	-	-
Common stock (a)	23,263	23,263	-	-
Mutual funds (b)	11,259	11,259	-	-
Annuity contracts (c)	7,779	-	-	7,779
Total	$45,089	$37,310	$ -	$7,779
Investments Measured at Net Asset Value (d)	49,283			
Total	$94,372			

The following table presents plan assets using the fair value hierarchy as of June 30, 2016:

	Total	**Level I**	**Level II**	**Level III**
Cash and cash equivalents	$1,143	$1,143	$ -	$-
Equity securities:				
Company common stock (a)	1,055	1,055	-	-
Common stock (a)	22,440	22,440	-	-
Mutual funds (b)	11,432	11,432	-	-
Annuity contracts (c)	9,031	-	-	9,031
Total	$45,101	$36,070	$ -	$9,031
Investments Measured at Net Asset Value (d)	49,063			
Total	$94,164			

(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.

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(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, 2017 and June 30, 2016:

	2017	2016
Fixed income funds	$20,819	$20,842
International equity securities	4,760	3,793
Real estate	8,566	10,537
Hedged equity mutual funds	15,138	13,891
Total	$49,283	$49,063

The following tables present a reconciliation of the fair value measurements using significant unobservable inputs (Level III) as of June 30, 2017 and 2016 (in thousands):

	2017	2016
Beginning balance	$9,031	$9,508
Actual return on plan assets:		
Relating to assets still held at reporting date	659	38
Purchases, sales and settlements, net	(1,911)	(619)
Transfers in and/or out of Level III	-	104
Ending balance	$7,779	$9,031

Cash Flows

Contributions

The Company expects to contribute $2,265 to its defined benefit pension plans in fiscal 2018.

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**
2018	$ 10,890	$ 1,682
2019	9,399	1,348
2020	9,161	1,238
2021	8,681	1,144
2022	8,130	1,044
Years 2023 - 2027	35,760	3,907

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

The Company sponsors defined contribution plans covering substantially all domestic employees and certain foreign employees. These plans provide for employer contributions based primarily on employee participation. The total expense under the plans was $1,658, $2,058 and $2,526 in fiscal 2017, 2016 and 2015, respectively.

N. INCOME TAXES

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

	2017	**2016**	**2015**
United States	$(13,048)	$(29,293)	$5,614
Foreign	3,519	3,998	10,286
	$(9,529)	$(25,295)	$15,900

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

	2017	**2016**	**2015**
Currently payable:			
Federal	$(191)	$(1,683)	$1,607
State	251	136	518
Foreign	771	1,468	2,832
	831	(79)	4,957
Deferred:			
Federal	(3,906)	(10,978)	408
State	(706)	(787)	5
Foreign	367	(438)	(855)
	(4,245)	(12,203)	(442)
	$(3,414)	$(12,282)	$4,515

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

	2017	**2016**
Deferred tax assets:		

Retirement plans and employee benefits	$13,755	$19,106
Foreign tax credit carryforwards	7,620	8,887
Federal tax credits	1,131	191
State net operating loss and other state credit carryforwards	1,213	768
Federal net operating loss	2,299	-
Inventory	1,992	1,775
Reserves	833	1,544
Foreign NOL carryforwards	3,606	3,176
Accruals	460	522
Other assets	665	678
	33,574	36,647
Deferred tax liabilities:		
Property, plant and equipment	5,488	6,329
Intangibles	971	2,011
Other liabilities	125	140
	6,584	8,480
Valuation Allowance	(3,803)	(3,123)
Total net deferred tax assets	$23,187	$25,044

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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. During fiscal 2017, the Company reported operating income in certain foreign jurisdictions where the loss carryforward period is unlimited. The Company has evaluated the likelihood of whether the net deferred tax assets related to these jurisdictions would be realized and concluded that based primarily upon the uncertainty to achieve levels of sustained improvement and uncertain exchange rates in these jurisdictions; (a) it is more likely than not that $3,803 of deferred tax assets would not be realized; and that (b) a full valuation allowance on the balance of deferred tax assets relating to these jurisdictions continues to be necessary. The Company recorded a net increase in valuation allowance of $680 in fiscal 2017 due to higher cumulative operating losses in these jurisdictions. Management believes that it is more likely than not that the results of future operations will generate sufficient taxable income and foreign source income to realize the remaining deferred tax assets.

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

	2017	**2016**	**2015**
U.S. federal income tax at 34%	$(3,240)	$(8,601)	$5,491
Increases (reductions) in tax resulting from:			
Foreign tax items	(179)	(2,525)	362
State taxes	(499)	(374)	32
Valuation allowance	(47)	(1,288)	(1,121)
Change in prior year estimate	899	473	157
Research and development tax credits	(230)	(348)	(337)
Section 199 deduction	-	-	(96)
Unrecognized tax benefits	65	(21)	5
Goodwill impairment	-	420	-
Other, net	(183)	(18)	22
	$(3,414)	$(12,282)	$4,515

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 $3,667 at June 30, 2017. 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 2013 through 2017 for our major operations in Italy, Belgium and Japan. The tax years open to examination in the U.S. are for years subsequent to fiscal 2013.

The Company has approximately $827 of unrecognized tax benefits as of June 30, 2017, which, if recognized would impact the effective tax rate. During the fiscal year the amount of unrecognized tax benefits increased primarily due to reserves established for the current year. During the next twelve months, the Company anticipates closure of the Internal Revenue Service audit of fiscal year 2015. 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, 2017	**June 30, 2016**
Unrecognized tax benefits, beginning of year	$790	$810
Additions based on tax positions related to the prior year	-	12
Additions based on tax positions related to the current year	55	172
Reductions based on tax positions related to the prior year	(13)	(4)
Subtractions due to statutes closing	(5)	(179)
Settlements with Taxing Authorities	-	(21)
Unrecognized tax benefits, end of year	$827	$790

Substantially all of the Company's unrecognized tax benefits as of June 30, 3017, if recognized, would affect the effective tax rate. As of June 30, 2017 and 2016, the amounts accrued for interest and penalties totaled $94 and $61, respectively, and are not included in the reconciliation above.

O. CONTINGENCIES

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

P. RESTRUCTURING OF OPERATIONS

In response to challenging global market conditions within the Company's oil and gas, global pleasure craft and commercial marine markets, the Company undertook a series of restructuring actions starting in late fiscal 2015, and continuing into the current fiscal year.

In March 2017, the Company formally commenced the exit from its India manufacturing operations by announcing the closure of its India factory. Exit activities include the involuntary termination of its factory employees, termination of leased facilities, and sale and/or disposal of certain plant equipment. As a result of these activities, an asset impairment charge of $96 is included in the statement of operations.

During fiscal 2017, the Company implemented additional restructuring activities, which primarily involved the reduction of workforce in its U.S., Belgian, and Italian manufacturing operations under a combination of voluntary and involuntary separation programs. These actions resulted in the elimination of 158 full-time employees in the manufacturing segment since June 2015. These actions resulted in a pre-tax restructuring charge of $1,791, $921 and $3,282 in fiscal 2017, 2016 and 2015, respectively. Accumulated costs to date under these programs within the manufacturing segment through June 30, 2017 were $5,875.

The following is a roll-forward of restructuring activity:

Accrued restructuring liability, June 30, 2015	$3,776
Additions	921
Payments and adjustments	(3,896)
Accrued restructuring liability, June 30, 2016	801
Additions	1,791
Payments and adjustments	(2,500)
Accrued restructuring liability, June 30, 2017	$92

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

TWIN DISC, INCORPORATED AND SUBSIDIARIES

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS

for the years ended June 30, 2017, 2016 and 2015 (in thousands)

Description	Balance at Beginning of Period	Charged to Costs and Expenses	Deductions[1]	Balance at End of Period
2017:				
Allowance for losses on accounts receivable	$ 1,824	$ 127	$ 432	$ 1,519
Deferred tax valuation allowance	$ 3,123	$ 826	$ 146	$ 3,803
2016:				
Allowance for losses on accounts receivable	$ 2,183	$ 237	$ 596	$ 1,824
Deferred tax valuation allowance	$ 3,577	$ 257	$ 711	$ 3,123
2015:				
Allowance for losses on accounts receivable	$ 3,637	$ 304	$ 1,758	$ 2,183
Deferred tax valuation allowance	$ 5,593	$ 805	$ 2,821	$ 3,577

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

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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 31, 2017 TWIN DISC, INCORPORATED

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

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

August 31, 2017 By: /s/ DAVID B. RAYBURN
David B. Rayburn
Chairman of the Board

August 31, 2017 By: /s/ JOHN H. BATTEN
John H. Batten
President, Chief Executive Officer

August 31, 2017 By: /s/ JEFFREY S. KNUTSON
Jeffrey S. Knutson
Vice President - Finance, Chief Financial Officer,

Treasurer and Secretary

August 31, 2017 By: /s/ DEBBIE A. LANGE
Debbie A. Lange
Corporate Controller (Chief Accounting Officer)

August 31, 2017 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)

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EXHIBIT INDEX

TWIN DISC, INCORPORATED

10-K for Year Ended June 30, 2017

Exhibit	Description	Included Herewith
3a)	Restated Articles of Incorporation of Twin Disc, Incorporated (Incorporated by reference to Exhibit 3.1 of the Company's Form 8-K dated December 6, 2007). File No. 001-07635.	
3b)	Restated Bylaws of Twin Disc, Incorporated, as amended through December 13, 2013 (Incorporated by reference to Exhibit 3.1 of the Company's Form 8-K dated December 17, 2013). File No. 001-07635.	
4a)	Description of Shareholder Rights Plan and Form of Rights Agreement dated as of December 20, 2007 by and between the Company and Mellon Investor Services, LLC, as Rights Agent, with Form of Rights Certificate (Incorporated by reference to Item 3.03 and Exhibit 4 of the Company's Form 8-K dated December 20, 2007). File No. 001-07635.	
4b)	First Amendment to Rights Agreement, effective as of May 1, 2012, between Twin Disc, Incorporated and Computershare Shareowner Services, LLC (Incorporated by reference to Exhibit 4.1 of the Company's Form 8-K dated May 1, 2012). 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 as amended (Incorporated by reference to Exhibit B of the Proxy Statement for the Annual Meeting of Shareholders held on October 20, 2006). File No. 001-07635.	
c)	The 2004 Stock Incentive Plan for Non-Employee Directors as amended (Incorporated by reference to Exhibit 99 of the Company’s Form 10-K for the year ended June 30, 2007). File No. 001-07635.	
d)	The Amended and Restated Twin Disc, Incorporated 2010 Long-Term Incentive Compensation Plan (Incorporated by reference to Exhibit 10.1 of the Company’s Form 8-K dated August 5, 2015). File No. 001-07635.	
e)	The 2010 Stock Incentive Plan for Non-Employee Directors (Incorporated by reference to Appendix B of the Proxy Statement for the Annual Meeting of Shareholders held on October 15, 2010). File No. 001-07635.	
f)	Form of Performance Stock Award Grant Agreement for award of performance shares on July 31, 2015 (Incorporated by reference to Exhibit 10.2 of the Company’s Form 8-K dated August 5, 2015). File No. 001-07635.	
g)	Form of Restricted Stock Grant Agreement for restricted stock grants on July 31, 2015 (Incorporated by reference to Exhibit 10.3 of the Company’s Form 8-K dated August 5, 2015). File No. 001-07635.	
h)	Form of Performance Stock Award Grant Agreement for award of performance shares on July 28, 2016 (Incorporated by reference to Exhibit 10.1 of the Company’s Form 8-K dated August 3, 2016).	

File No. 001-07635.

i) Form of Restricted Stock Award Grant Agreement for restricted stock grants on July 28, 2016 (Incorporated by reference to Exhibit 10.2 of the Company's Form 8-K dated August 3, 2016). File No. 001-07635.

j) 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.

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k)	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.
l)	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.
m)	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 5, 2014). File No. 001-07635.
n)	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.
o)	Credit Agreement Between Twin Disc, Incorporated and Bank of Montreal, dated April 22, 2016 (Incorporated by reference to Exhibit 10.1 of the Company’s Form 8-K dated April 26, 2016). File No. 001-07635.
p)	Security Agreement Between Twin Disc, Incorporated, Mill-Log Equipment Co., Inc., and Bank of Montreal, dated April 22, 2016 (Incorporated by reference to Exhibit 10.2 of the Company’s Form 8-K dated April 26, 2016). File No. 001-07635.
q)	IP Security Agreement Between Twin Disc, Incorporated and Bank of Montreal, dated April 22, 2016 (Incorporated by reference to Exhibit 10.3 of the Company’s Form 8-K dated April 26, 2016). File No. 001-07635.
r)	Pledge Agreement Between Twin Disc, Incorporated, Mill-Log Equipment Co., Inc. and Bank of Montreal, dated April 22, 2016 (Incorporated by reference to Exhibit 10.4 of the Company’s Form 8-K dated April 26, 2016). File No. 001-07635.
s)	Guaranty Agreement Between Mill-Log Equipment Co., Inc. and Bank of Montreal, dated April 22, 2016 (Incorporated by reference to Exhibit 10.5 of the Company’s Form 8-K dated April 26, 2016). File No. 001-07635.
t)	Guarantor Security Agreement Between Mill-Log Equipment Co., Inc. and Bank of Montreal, dated April 22, 2016 (Incorporated by reference to Exhibit 10.6 of the Company’s Form 8-K dated April 26, 2016). File No. 001-07635.
u)	Negative Pledge Agreement Between Twin Disc, Incorporated and Bank of Montreal, dated April 22, 2016 (Incorporated by reference to Exhibit 10.7 of the Company’s Form 8-K dated April 26, 2016). File No. 001-07635.

Exhibit	**Description**	**Included Herewith**
21	Subsidiaries of the Registrant	X
23	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	Taxonomy Extension Schema Document, filed herewith
101.CAL XBRL	Taxonomy Extension Calculation Linkbase Document, filed herewith
101.DEF XBRL	Taxonomy Extension Definition Linkbase Document, filed herewith
101.LAB XBRL	Taxonomy Extension Label Linkbase Document, filed herewith

101.PRE XBRL Taxonomy Extension Presentation Linkbase Document, filed herewith

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