BARNES GROUP INC
Form 10-Q
July 28, 2017

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q
(Mark One)

x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended June 30, 2017

OR

¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission file number 1-4801

BARNES GROUP INC.
(Exact name of registrant as specified in its charter)

Delaware	06-0247840
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
123 Main Street, Bristol, Connecticut	06010
(Address of Principal Executive Offices)	(Zip Code)

(860) 583-7070
Registrant's telephone number, including area code

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

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

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

Large accelerated filer x	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 x

The registrant had outstanding 53,837,680 shares of common stock as of July 26, 2017.

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This Quarterly Report on Form 10-Q contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. See “FORWARD-LOOKING STATEMENTS” under Part I - Item 2 “Management's Discussion and Analysis of Financial Condition and Results of Operations” of this Quarterly Report on Form 10-Q.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

BARNES GROUP INC.
CONSOLIDATED STATEMENTS OF INCOME
(Dollars in thousands, except per share data)
(Unaudited)

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Net sales	$364,493	$306,693	$706,295	$595,025
Cost of sales	236,506	197,173	456,339	383,428
Selling and administrative expenses	70,847	62,060	137,069	122,610
	307,353	259,233	593,408	506,038
Operating income	57,140	47,460	112,887	88,987
Interest expense	3,541	2,815	6,890	5,806
Other expense (income), net	394	(824)	416	(597)
Income before income taxes	53,205	45,469	105,581	83,778
Income taxes	8,178	12,257	22,251	21,718
Net income	$45,027	$33,212	$83,330	$62,060
Per common share:				
Basic	$0.83	$0.61	$1.54	$1.14
Diluted	0.82	0.61	1.52	1.14
Dividends	0.14	0.13	0.27	0.25
Weighted average common shares outstanding:				
Basic	54,177,251	54,168,562	54,178,185	54,207,145
Diluted	54,722,211	54,642,071	54,686,172	54,662,389

See accompanying notes.

BARNES GROUP INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Dollars in thousands)
(Unaudited)

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Net income	$45,027	$33,212	$83,330	$62,060
Other comprehensive income (loss), net of tax				
Unrealized losses on hedging activities, net of tax (1)	(544)	(282)	(461)	(430)
Foreign currency translation adjustments, net of tax (2)	41,562	(19,603)	60,172	1,110
Defined benefit pension and other postretirement benefits, net of tax (3)	671	2,378	1,936	3,697
Total other comprehensive income (loss), net of tax	41,689	(17,507)	61,647	4,377
Total comprehensive income	$86,716	$15,705	$144,977	$66,437

(1) Net of tax of $(250) and $(79) for the three months ended June 30, 2017 and 2016, respectively, and $(212) and $(141) for the six months ended June 30, 2017 and 2016, respectively.

(2) Net of tax of $314 and $(83) for the three months ended June 30, 2017 and 2016, respectively, and $380 and $74 for the six months ended June 30, 2017 and 2016, respectively.

(3) Net of tax of $989 and $1,018 for the three months ended June 30, 2017 and 2016, respectively, and $1,890 and $1,953 for the six months ended June 30, 2017 and 2016, respectively.

See accompanying notes.

BARNES GROUP INC.
CONSOLIDATED BALANCE SHEETS
(Dollars in thousands, except per share data)
(Unaudited)

	June 30, 2017	December 31, 2016
Assets		
Current assets		
Cash and cash equivalents	$104,805	$66,447
Accounts receivable, less allowances (2017 - $4,138; 2016 - $3,992)	313,491	287,123
Inventories	248,370	227,759
Prepaid expenses and other current assets	28,483	27,163
Total current assets	695,149	608,492
Deferred income taxes	31,496	25,433
Property, plant and equipment	809,509	762,187
Less accumulated depreciation	(460,970)	(427,698)
	348,539	334,489
Goodwill	674,785	633,436
Other intangible assets, net	520,061	522,258
Other assets	16,345	13,431
Total assets	$2,286,375	$2,137,539
Liabilities and Stockholders' Equity		
Current liabilities		
Notes and overdrafts payable	$10,000	$30,825
Accounts payable	127,393	112,024
Accrued liabilities	168,362	156,967
Long-term debt - current	1,887	2,067
Total current liabilities	307,642	301,883
Long-term debt	494,222	468,062
Accrued retirement benefits	94,263	109,350
Deferred income taxes	64,770	66,446
Other liabilities	26,206	23,440
Commitments and contingencies (Note 13)		
Stockholders' equity		
Common stock - par value $0.01 per share		
Authorized: 150,000,000 shares	628	627
Issued: at par value (2017 - 62,774,479 shares; 2016 - 62,692,403 shares)		
Additional paid-in capital	449,489	443,235
Treasury stock, at cost (2017 - 9,001,529 shares; 2016 - 8,889,947 shares)	(257,450)	(251,827)
Retained earnings	1,245,786	1,177,151
Accumulated other non-owner changes to equity	(139,181)	(200,828)
Total stockholders' equity	1,299,272	1,168,358
Total liabilities and stockholders' equity	$2,286,375	$2,137,539

See accompanying notes.

BARNES GROUP INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in thousands)
(Unaudited)

	Six months ended June 30, 2017	2016
Operating activities:		
Net income	$ 83,330	$ 62,060
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	45,488	38,639
Gain on disposition of property, plant and equipment	(24)	(286)
Stock compensation expense	5,494	5,947
Changes in assets and liabilities, net of the effects of acquisitions:		
Accounts receivable	(18,304)	(11,036)
Inventories	(10,743)	4,755
Prepaid expenses and other current assets	(642)	(2,378)
Accounts payable	15,717	8,014
Accrued liabilities	8,517	8,512
Deferred income taxes	(14,569)	(536)
Long-term retirement benefits	(12,533)	(16,199)
Other	663	(459)
Net cash provided by operating activities	102,394	97,033
Investing activities:		
Proceeds from disposition of property, plant and equipment	205	439
Capital expenditures	(27,325)	(22,987)
Business acquisitions, net of cash acquired	(8,811)	(1,546)
Component Repair Program payments	—	(900)
Other	(3,000)	—
	(38,931)	(24,994)

Net cash used by investing activities				
Financing activities:				
Net change in other borrowings	(20,925	)	(2,349	)
Payments on long-term debt	(49,311	)	(127,484	)
Proceeds from the issuance of long-term debt	74,716		99,022	
Proceeds from the issuance of common stock	1,148		311	
Common stock repurchases	(5,383	)	(8,000	)
Dividends paid	(14,524	)	(13,450	)
Withholding taxes paid on stock issuances	(240	)	(465	)
Other	(14,451	)	(2,876	)
Net cash used by financing activities	(28,970	)	(55,291	)
Effect of exchange rate changes on cash flows	3,865		652	
Increase in cash and cash equivalents	38,358		17,400	
Cash and cash equivalents at beginning of period	66,447		83,926	
Cash and cash equivalents at end of period	$ 104,805		$ 101,326	

See accompanying notes.

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BARNES GROUP INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(All dollar amounts included in the notes are stated in thousands except per share data)
(Unaudited)

1. Summary of Significant Accounting Policies

The accompanying unaudited consolidated balance sheet and the related unaudited consolidated statements of income, comprehensive income and cash flows have been prepared in accordance with generally accepted accounting principles for interim financial information and with the instructions to Form 10-Q and Rule 10-01 of Regulation S-X. The consolidated financial statements do not include all information and notes required by accounting principles generally accepted in the United States of America for complete financial statements. The balance sheet as of December 31, 2016 has been derived from the 2016 financial statements of Barnes Group Inc. (the “Company”). For additional information, please refer to the consolidated financial statements and notes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2016. In the opinion of management, all adjustments, including normal recurring accruals considered necessary for a fair statement of the results, have been included. Operating results for the six-month period ended June 30, 2017 are not necessarily indicative of the results that may be expected for the year ending December 31, 2017. Certain reclassifications have been made to prior year amounts.

2. Acquisition

On April 3, 2017, the Company completed its acquisition of the assets of the privately held Gammaflux L.P. business ("Gammaflux"), a leading supplier of hot runner temperature and sequential valve gate control systems to the plastics industry. Gammaflux, which is headquartered in Sterling, Virginia and has offices in Illinois and Germany, provides temperature control solutions for injection molding, extrusion, blow molding, thermoforming, and other applications. Its end markets include packaging, electronics, automotive, household products, medical, and tool building. The Company acquired the assets of Gammaflux for an aggregate purchase price of $8,754, which was financed using cash on hand and borrowings under the Company's revolving credit facility. The purchase price includes adjustments under the terms of the Asset Purchase Agreement ("APA"), including $2 related to cash acquired, and is subject to post closing adjustments under the terms of the APA. In connection with the acquisition, the Company recorded $1,467 of goodwill and $3,700 of intangible assets.

During the six months ended June 30, 2017, the Company incurred $184 of acquisition-related costs related to the Gammaflux acquisition. These costs include due diligence costs and transaction costs to complete the acquisition and have been recognized in the Consolidated Statements of Income as selling and administrative expenses.

The operating results of Gammaflux have been included in the Consolidated Statements of Income since the date of acquisition. The Company reported $3,282 in net sales for the period from the acquisition date through June 30, 2017. Gammaflux results have been included within the Industrial segment.

3. Net Income Per Common Share

For the purpose of computing diluted net income per common share, the weighted-average number of common shares outstanding is increased for the potential dilutive effects of stock-based incentive plans. For the purpose of computing diluted net income per common share, the weighted-average number of common shares outstanding was increased by 544,960 and 473,509 for the three-month periods ended June 30, 2017 and 2016, respectively, and by 507,987 and 455,244 for the six-month periods ended June 30, 2017 and 2016, respectively, to account for the potential dilutive effect of stock-based incentive plans. There were no adjustments to net income for the purposes of computing income available to common stockholders for the periods.

The calculation of weighted-average diluted shares outstanding excludes all shares that would have been anti-dilutive. During the three-month periods ended June 30, 2017 and 2016, the Company excluded 0 and 367,255 stock awards, respectively, from the calculation of weighted-average diluted shares outstanding as the stock awards were considered anti-dilutive. During the six-month periods ended June 30, 2017 and 2016, the Company excluded 88,891 and 414,749 stock awards respectively, from the calculation of weighted-average diluted shares outstanding as the stock awards were considered anti-dilutive.

The Company granted 125,300 stock options, 85,307 restricted stock unit awards and 83,970 performance share awards ("PSAs") in February 2017 as part of its annual grant awards. All of the stock options and the restricted stock unit awards vest upon meeting certain service conditions. The restricted stock unit awards are included in basic weighted-average common shares outstanding as they contain nonforfeitable rights to dividend payments. The performance share awards are part of the

long-term Performance Share Award Program (the "Awards Program") and are based on performance goals that are driven by a combination of independently measured metrics (depending on the grant year) with each metric being weighted equally. The metrics for awards granted in 2016 and 2017 include the Company's total shareholder return ("TSR") and return on invested capital ("ROIC"). The TSR metric is designed to assess the long-term Company performance relative to the performance of companies included in the Russell 2000 Index over a three-year performance period. The ROIC metric is measured based on pre-established Company targets over the same period. The participants can earn from zero to 250% of the target award and the award includes a forfeitable right to dividend equivalents, which are not included in the aggregate target award numbers. The fair value of the TSR portion of the PSA was determined using a Monte Carlo valuation method as the award contains a market condition.

4. Inventories

The components of inventories consisted of:

	June 30, 2017	December 31, 2016
Finished goods	$72,040	$ 71,100
Work-in-process	112,641	98,246
Raw material and supplies	63,689	58,413
	$248,370	$ 227,759

5. Goodwill and Other Intangible Assets

Goodwill:

The following table sets forth the change in the carrying amount of goodwill for each reportable segment and for the Company as of and for the period ended June 30, 2017:

	Industrial	Aerospace	Total Company
January 1, 2017	$602,650	$ 30,786	$633,436
Acquisition related	3,262	—	3,262
Foreign currency translation	38,087	—	38,087
June 30, 2017	$643,999	$ 30,786	$674,785

In the second quarter of 2017, management performed its annual impairment testing of goodwill. Based on this assessment, there was no goodwill impairment recognized as of June 30, 2017.

Other Intangible Assets:

Other intangible assets consisted of:

		June 30, 2017		December 31, 2016	
	Range of Life -Years	Gross Amount	Accumulated Amortization	Gross Amount	Accumulated Amortization
Amortized intangible assets:					
Revenue sharing programs (RSPs)	Up to 30	$293,700	$ (101,755)	$293,700	$ (95,701)
Component repair programs (CRPs)	Up to 30	111,839	(13,562)	111,839	(10,497)
Customer lists/relationships	10-16	215,966	(59,112)	215,266	(53,198)
Patents and technology	4-14	87,052	(42,784)	84,052	(37,897)
Trademarks/trade names	10-30	11,950	(10,166)	11,950	(9,967)
Other	Up to 15	20,551	(16,741)	20,551	(16,338)
		741,058	(244,120)	737,358	(223,598)
Unamortized intangible assets:					
Trade names		42,770	—	42,770	—

Foreign currency translation	(19,647)	—	(34,272)	—
Other intangible assets	$764,181	$ (244,120)	$745,856	$ (223,598)

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Estimated amortization of intangible assets for future periods is as follows: 2017 - $40,000; 2018 - $40,000; 2019 - $39,000; 2020 - $37,000 and 2021 - $36,000.

In the second quarter of 2017 management performed its annual impairment testing of its trade names, indefinite-lived intangible assets. Based on this assessment, there was no impairment recognized as of June 30, 2017.

6. Debt

The Company's debt agreements contain financial covenants that require the maintenance of interest coverage and leverage ratios. The Company is in compliance with its financial covenants as of June 30, 2017, and continues to monitor its future compliance based on current and anticipated future economic conditions.

Long-term debt and notes and overdrafts payable at June 30, 2017 and December 31, 2016 consisted of:

	June 30, 2017		December 31, 2016	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Revolving credit agreement	$389,791	$393,670	$363,300	$364,775
3.97% Senior Notes	100,000	102,493	100,000	101,598
Borrowings under lines of credit and overdrafts	10,000	10,000	30,825	30,825
Capital leases	5,121	5,590	5,413	5,902
Other foreign bank borrowings	1,197	1,209	1,416	1,428
	506,109	512,962	500,954	504,528
Less current maturities	(11,887)		(32,892)	
Long-term debt	$494,222		$468,062	

In February 2017, the Company and certain of its subsidiaries entered into the fourth amendment of its fifth amended and restated revolving credit agreement (the "Amended Credit Agreement") and retained Bank of America, N.A as the Administrative Agent for the lenders. The Amended Credit Agreement increases the facility from $750,000 to $850,000 and extends the maturity date from September 2018 to February 2022. The Amended Credit Agreement also increases the existing accordion feature from $250,000, allowing the Company to now request additional borrowings of up to $350,000. The Company may exercise the accordion feature upon request to the Administrative Agent as long as an event of default has not occurred or is not continuing. The borrowing availability of $850,000, pursuant to the terms of the Amended Credit Agreement, allows for multi-currency borrowing which includes euro, sterling or Swiss franc borrowing, up to $600,000. Depending on the Company's consolidated leverage ratio, and at the election of the Company, borrowings under the Amended Credit Agreement will bear interest at either LIBOR plus a margin of between 1.10% and 1.70% or the base rate, as defined in the Amended Credit Agreement, plus a margin of 0.10% to 0.70%. The Company paid fees and expenses of $2,542 in conjunction with executing the Amended Credit Agreement; such fees have been deferred within Other Assets on the accompanying Consolidated Balance Sheets and are being amortized into interest expense on the accompanying Consolidated Statements of Income through its maturity. Cash used to pay these fees have been recorded through other financing activities on the Consolidated Statements of Cash Flows.

Borrowings and availability under the Amended Credit Agreement were $389,791 and $460,209, respectively, at June 30, 2017 and $363,300 and $386,700, respectively, at December 31, 2016. The average interest rate on these borrowings was 2.32% and 1.86% on June 30, 2017 and December 31, 2016, respectively. The fair value of the borrowings is based on observable Level 2 inputs. The borrowings were valued using discounted cash flows based upon the Company's estimated interest costs for similar types of borrowings.

In October 2014, the Company entered into a Note Purchase Agreement ("Note Purchase Agreement"), among the Company and New York Life Insurance Company, New York Life Insurance and Annuity Corporation and New York Life Insurance and Annuity Corporation Institutionally Owned Life Insurance Separate Account, as purchasers, for the issuance of $100,000 aggregate principal amount of 3.97% Senior Notes due October 17, 2024 (the "3.97% Senior Notes").

The 3.97% Senior Notes are senior unsecured obligations of the Company and pay interest semi-annually on April 17 and October 17 of each year at an annual rate of 3.97%. The 3.97% Senior Notes will mature on October 17, 2024 unless earlier prepaid in accordance with their terms. Subject to certain conditions, the Company may, at its option, prepay all or any part of the 3.97% Senior Notes in an amount equal to 100% of the principal amount of the 3.97% Senior Notes so prepaid, plus any

accrued and unpaid interest to the date of prepayment, plus the Make-Whole Amount, as defined in the Note Purchase Agreement, with respect to such principal amount being prepaid. The fair value of the 3.97% Senior Notes was determined using the US Treasury yield and a long-term credit spread for similar types of borrowings that represent Level 2 observable inputs.
The Company's borrowing capacity remains limited by various debt covenants in the Amended Credit Agreement and the Note Purchase Agreement (the "Agreements"). The Agreements require the Company to maintain a ratio of Consolidated Senior Debt, as defined, to Consolidated EBITDA, as defined, of not more than 3.25 times ("Senior Debt Ratio"), a ratio of Consolidated Total Debt, as defined, to Consolidated EBITDA of not more than 3.75 times and a ratio of Consolidated EBITDA to Consolidated Cash Interest Expense, as defined, of not less than 4.25, in each case at the end of each fiscal quarter; provided that the debt to EBITDA ratios are permitted to increase for a period of four fiscal quarters after the closing of certain permitted acquisitions.

In addition, the Company has available approximately $59,000 in uncommitted short-term bank credit lines ("Credit Lines") and overdraft facilities. Under the Credit Lines, $10,000 was borrowed at June 30, 2017 at an interest rate of 2.04% and $30,700 was borrowed at December 31, 2016 at an average interest rate of 1.96%. The Company had also borrowed $0 and $125 under the overdraft facilities at June 30, 2017 and December 31, 2016, respectively. Repayments under the Credit Lines are due within one month after being borrowed. Repayments of the overdrafts are generally due within two days after being borrowed. The carrying amounts of the Credit Lines and overdrafts approximate fair value due to the short maturities of these financial instruments.

The Company has capital leases at the Thermoplay and Männer businesses. The fair value of the capital leases is based on observable Level 2 inputs. These instruments are valued using discounted cash flows based upon the Company's estimated interest costs for similar types of borrowings.

The Company also has other foreign bank borrowings. The fair value of the other foreign bank borrowings is based on observable Level 2 inputs. These instruments are valued using discounted cash flows based upon the Company's estimated interest costs for similar types of borrowings.

7. Derivatives

The Company has manufacturing and sales facilities around the world and thus makes investments and conducts business transactions denominated in various currencies. The Company is also exposed to fluctuations in interest rates and commodity price changes. These financial exposures are monitored and managed by the Company as an integral part of its risk management program.

Financial instruments have been used by the Company to hedge its exposure to fluctuations in interest rates. In 2012, the Company entered into five-year interest rate swap agreements (the "swaps") transacted with three banks which together convert the interest on the first $100,000 of the Company's one-month LIBOR-based borrowings from a variable rate plus the borrowing spread to a fixed rate of 1.03% plus the borrowing spread. The swaps expired on April 28, 2017. The Company entered into a new interest rate swap agreement (the "swap") that commenced on April 28, 2017, with one bank, and converts the interest on the first $100,000 of the Company's one-month LIBOR-based borrowings from a variable rate plus the borrowing spread to a fixed rate of 1.92% plus the borrowing spread. The swap expires on January 31, 2022. These interest rate swap agreements are accounted for as cash flow hedges.

The Company also uses financial instruments to hedge its exposures to fluctuations in foreign currency exchange rates. The Company has various contracts outstanding which primarily hedge recognized assets or liabilities, and anticipated transactions in various currencies including the Euro, British pound sterling, U.S. dollar, Canadian dollar, Japanese yen, Singapore dollar, Korean won, Swedish kroner, Chinese renminbi and Swiss franc. Certain foreign currency derivative instruments are treated as cash flow hedges of forecasted transactions. All foreign exchange

contracts are due within two years.

The Company does not use derivatives for speculative or trading purposes or to manage commodity exposures. Changes in the fair market value of derivatives that qualify as fair value hedges or cash flow hedges are recorded directly to earnings or accumulated other non-owner changes to equity, depending on the designation. Amounts recorded to accumulated other non-owner changes to equity are reclassified to earnings in a manner that matches the earnings impact of the hedged transaction. Any ineffective portion, or amounts related to contracts that are not designated as hedges, are recorded directly to earnings.

The Company's policy for classifying cash flows from derivatives is to report the cash flows consistent with the underlying hedged item. Other financing cash flows during the first half of 2017 and 2016, as presented on the consolidated statements of

cash flows, include $11,822 and $2,780, respectively, of net cash payments from the settlement of foreign currency hedges related to intercompany financing.

The following table sets forth the fair value amounts of derivative instruments held by the Company.

	June 30, 2017		December 31, 2016	
	Asset Derivatives	Liability Derivatives	Asset Derivatives	Liability Derivatives
Derivatives designated as hedging instruments:				
Interest rate contracts	$—	$ (500)	$—	$ (78)
Foreign exchange contracts	—	(426)	—	(177)
Derivatives not designated as hedging instruments:				
Foreign exchange contracts	660	(258)	397	(1,499)
Total derivatives	$660	$ (1,184)	$397	$ (1,754)

Asset derivatives are recorded in prepaid expenses and other current assets in the accompanying consolidated balance sheets. Liability derivatives related to interest rate contracts and foreign exchange contracts are recorded in other liabilities and accrued liabilities, respectively, in the accompanying Consolidated Balance Sheets.

The following table sets forth the gain (loss), net of tax, recorded in accumulated other comprehensive income (loss), net of tax, for the three- and six-month periods ended June 30, 2017 and 2016 for derivatives held by the Company and designated as hedging instruments.

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Cash flow hedges:				
Interest rate contracts	$(311)	$3	$(264)	$(62)
Foreign exchange contracts	(233)	(285)	(197)	(368)
	$(544)	$(282)	$(461)	$(430)

Amounts related to the interest rate swaps included within accumulated other comprehensive income (loss) that were reclassified to expense during the first half of 2017 of 2017 and 2016 resulted in a fixed rate of interest of 1.03% plus the borrowing spread for the first $100,000 of one-month LIBOR borrowings. Additionally, there were no amounts recognized in income for hedge ineffectiveness during the three- and six- month periods ended June 30, 2017 and 2016.

The following table sets forth the net (loss) gain recorded in other expense (income), net in the consolidated statements of income for the three- and six-month periods ended June 30, 2017 and 2016 for non-designated derivatives held by the Company. Such amounts were substantially offset by the net (gain) loss recorded on the underlying hedged asset or liability, also recorded in other expense (income), net.

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Foreign exchange contracts	$(9,508)	$(39)	$(10,404)	$(3,751)

8. Fair Value Measurements

The provisions of the accounting standard for fair value define fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. This standard classifies the inputs used to measure fair value into the following hierarchy:

Level 1	Unadjusted quoted prices in active markets for identical assets or liabilities
Level 2	Unadjusted quoted prices in active markets for similar assets or liabilities, or unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable for the asset or liability

Level 3 Unobservable inputs for the asset or liability

The following table provides the financial assets and financial liabilities reported at fair value and measured on a recurring basis:

		Fair Value Measurements Using		
Description	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
June 30, 2017				
Asset derivatives	$660	$—	$ 660	$ —
Liability derivatives	(1,184)	—	(1,184)	—
Bank acceptances	10,834	—	10,834	—
Rabbi trust assets	2,404	2,404	—	—
	$12,714	$2,404	$ 10,310	$ —
December 31, 2016				
Asset derivatives	$397	$—	$ 397	$ —
Liability derivatives	(1,754)	—	(1,754)	—
Bank acceptances	9,690	—	9,690	—
Rabbi trust assets	2,216	2,216	—	—
	$10,549	$2,216	$ 8,333	$ —

The derivative contracts are valued using observable current market information as of the reporting date such as the prevailing LIBOR-based interest rates and foreign currency spot and forward rates. Bank acceptances represent financial instruments accepted from certain Chinese customers in lieu of cash paid on receivables, generally range from three to six months in maturity and are guaranteed by banks. The carrying amounts of the bank acceptances, which are included within prepaid expenses and other current assets, approximate fair value due to their short maturities. The fair values of rabbi trust assets are based on quoted market prices from various financial exchanges.

9. Pension and Other Postretirement Benefits

Pension and other postretirement benefits expenses consisted of the following:

	Three months ended June 30,		Six months ended June 30,	
Pensions	2017	2016	2017	2016
Service cost	$1,459	$1,318	$3,102	$2,702
Interest cost	4,666	4,945	9,287	9,781
Expected return on plan assets	(6,816)	(7,667)	(13,676)	(15,210)
Amortization of prior service cost	111	55	220	105
Amortization of actuarial losses	2,663	2,856	5,143	5,412
Curtailment gain	(7,217)	—	(7,217)	—

Settlement gain	(230)	—	(491)	—
Net periodic benefit cost	$(5,364)	$1,507	$(3,632)	$2,790

In June 2017, the Company authorized the closure of its FOBOHA facility located in Muri, Switzerland which resulted in pension curtailment and settlement gains of $7,217 and $230, respectively. See Note 14 of the Consolidated Financial Statements for additional information related to the Closure.

In May 2017, the Company contributed $5,000 of discretionary contributions to its U.S Qualified pension plans. The Company currently does not plan to make any additional discretionary contributions to its Qualified U.S. Plans, however an incremental $5,000 is expected to be made into its U.S. Non-qualified and international pension plans throughout 2017.

	Three months ended June 30,		Six months ended June 30,	
Other Postretirement Benefits	2017	2016	2017	2016
Service cost	$20	$27	$42	$61
Interest cost	392	431	781	884
Amortization of prior service credit	(17)	(94)	(34)	(187)
Amortization of actuarial losses	70	91	139	267
Net periodic benefit cost	$465	$455	$928	$1,025

10. Income Taxes

The Company merged certain of its Swiss operating legal entities during the second quarter of 2017 (the "merger"). Certain of these entities included businesses with deferred tax assets that were offset by valuation allowances. As a result of the merger, the Company reevaluated the valuation allowances and deferred tax assets related to these businesses and determined such allowances were no longer required as the merged entities would more likely than not utilize previously unbenefitted net operating losses that would have otherwise expired. In addition, certain deferred tax assets were adjusted as a result of higher income tax rates. The impacts of these adjustments are treated as discrete items in the second quarter of 2017 resulting in reductions in tax expense of $5,872 and $461, respectively, in the first half of 2017.

The Company's effective tax rate for the first half of 2017 was 21.1% compared with 25.9% in the first half of 2016 and 25.7% for the full year 2016. The decrease in the first half of 2017 effective tax rate from the full year 2016 rate is primarily due to the adjustment of certain valuation reserves and other benefits resulting from the merger of legal entities in Switzerland, partially offset by the expiration of certain tax holidays, the decrease in the excess tax benefit on stock awards and the projected change in the mix of earnings attributable to higher-taxing jurisdictions.

The Aerospace and Industrial segments were previously awarded international tax holidays. All significant tax holidays for which the Company currently receives benefit are expected to expire in the fourth quarter of 2017.

11. Changes in Accumulated Other Comprehensive Income (Loss) by Component

The following table sets forth the changes in accumulated other comprehensive income (loss), net of tax, by component for the six month periods ended June 30, 2017 and 2016:

	Gains and Losses on Cash Flow Hedges	Pension and Other Postretirement Benefit Items	Foreign Currency Items	Total
January 1, 2017	$(227)	$(114,570)	$(86,031)	$(200,828)
Other comprehensive (loss) income before reclassifications to consolidated statements of income	(711)	(1,225)	60,172	58,236
	250	3,161	—	3,411

Amounts reclassified from accumulated other comprehensive income to the consolidated statements of income				
Net current-period other comprehensive (loss) income	(461)	1,936	60,172	61,647
June 30, 2017	$ (688)	$ (112,634)	$ (25,859)	$ (139,181)

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	Gains and Losses on Cash Flow Hedges	Pension and Other Postretirement Benefit Items	Foreign Currency Items	Total
January 1, 2016	$ 115	$ (105,703)	$(37,664)	$(143,252)
Other comprehensive (loss) income before reclassifications to consolidated statements of income	(571)	53	1,110	592
Amounts reclassified from accumulated other comprehensive income to the consolidated statements of income	141	3,644	—	3,785
Net current-period other comprehensive (loss) income	(430)	3,697	1,110	4,377
June 30, 2016	$ (315)	$ (102,006)	$(36,554)	$(138,875)

The following table sets forth the reclassifications out of accumulated other comprehensive income (loss) by component for the three- and six- month periods ended June 30, 2017 and 2016:

Details about Accumulated Other Comprehensive Income (Loss) Components	Amount Reclassified from Accumulated Other Comprehensive Income (Loss)		Affected Line Item in the Consolidated Statements of Income
	Three months ended June 30, 2017	Three months ended June 30, 2016	
Gains and losses on cash flow hedges			
Interest rate contracts	$(164)	$(149)	Interest expense
Foreign exchange contracts	(108)	55	Net sales
	(272)	(94)	Total before tax
	85	43	Tax benefit
	(187)	(51)	Net of tax
Pension and other postretirement benefit items			
Amortization of prior-service (costs) credits, net	$(94)	$39	(A)
Amortization of actuarial losses	(2,733)	(2,947)	(A)
Curtailment gain	187	—	(A)
Settlement gain	230	—	(A)
	(2,410)	(2,908)	Total before tax
	989	1,018	Tax benefit
	(1,421)	(1,890)	Net of tax
Total reclassifications in the period	$(1,608)	$(1,941)	

(A) These accumulated other comprehensive income (loss) components are included within the computation of net periodic pension cost. See Note 9.

Details about Accumulated Other Comprehensive Income (Loss) Components	Amount Reclassified from Accumulated Other Comprehensive Income (Loss)		Affected Line Item in the Consolidated Statements of Income
	Six months ended June 30, 2017	Six months ended June 30, 2016	
Gains and losses on cash flow hedges			
Interest rate contracts	$(227)	$(300)	Interest expense
Foreign exchange contracts	(138)	60	Net sales
	(365)	(240)	Total before tax
	115	99	Tax benefit
	(250)	(141)	Net of tax
Pension and other postretirement benefit items			
Amortization of prior-service (costs) credits, net	$(186)	$82	(A)
Amortization of actuarial losses	(5,282)	(5,679)	(A)
Curtailment gain	187	—	(A)
Settlement gain	230	—	(A)
	(5,051)	(5,597)	Total before tax
	1,890	1,953	Tax benefit
	(3,161)	(3,644)	Net of tax
Total reclassifications in the period	$(3,411)	$(3,785)	

(A) These accumulated other comprehensive income (loss) components are included within the computation of net periodic pension cost. See Note 9.

12. Information on Business Segments

The Company is organized based upon the nature of its products and services and reports under two global business segments: Industrial and Aerospace. Segment information is consistent with how management reviews the businesses, makes investing and resource allocation decisions and assesses operating performance. The Company has not aggregated operating segments for purposes of identifying these two reportable segments.

The Industrial segment is a global manufacturer of highly-engineered, high-quality precision components, products and systems for critical applications serving a diverse customer base in end-markets such as transportation, industrial equipment, consumer products, packaging, electronics, medical devices, and energy. Focused on innovative custom solutions, Industrial participates in the design phase of components and assemblies whereby customers receive the benefits of application and systems engineering, new product development, testing and evaluation, and the manufacturing of final products. Products are sold primarily through its direct sales force and global distribution channels. Industrial's Molding Solutions businesses design and manufacture customized hot runner systems, advanced mold cavity sensors and process control systems, and precision high cavitation mold assemblies - collectively, the enabling technologies for many complex injection molding applications. Industrial's Nitrogen Gas Products business provides innovative cost effective force and motion solutions for sheet metal forming, heavy duty suspension and other selective niche markets for customers worldwide. Industrial's Engineered Components businesses manufacture

and supply precision mechanical products used in transportation and industrial applications, including mechanical springs, high-precision punched and fine-blanked components and retention rings.

The Aerospace segment is a global provider of fabricated and precision-machined components and assemblies for original equipment manufacturer ("OEM") turbine engine, airframe and industrial gas turbine builders, and the military. Aerospace Aftermarket includes the jet engine component maintenance overhaul and repair business ("MRO") and the spare parts business. MRO includes our Component Repair Programs ("CRPs"), which service many of the world's major turbine engine manufacturers, commercial airlines and the military. The spare parts business includes our revenue sharing programs ("RSPs") under which the Company receives an exclusive right to supply designated aftermarket parts over the life of the related aircraft engine program.

The following tables set forth information about the Company's operations by its two reportable segments:

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Net sales				
Industrial	$251,845	$204,540	$479,185	$399,786
Aerospace	112,662	102,153	227,132	195,240
Intersegment sales	(14)	—	(22)	(1)
Total net sales	$364,493	$306,693	$706,295	$595,025
Operating profit				
Industrial	$37,395	$34,843	$70,850	$64,487
Aerospace	19,745	12,617	42,037	24,500
Total operating profit	57,140	47,460	112,887	88,987
Interest expense	3,541	2,815	6,890	5,806
Other expense (income), net	394	(824)	416	(597)
Income before income taxes	$53,205	$45,469	$105,581	$83,778

	June 30, 2017	December 31, 2016
Assets		
Industrial	$1,473,149	$1,356,081
Aerospace	647,192	647,766
Other (A)	166,034	133,692
Total assets	$2,286,375	$2,137,539

(A) "Other" assets include corporate-controlled assets, the majority of which are cash and deferred tax assets.

13. Commitments and Contingencies

Product Warranties

The Company provides product warranties in connection with the sale of certain products. From time to time, the Company is subject to customer claims with respect to product warranties. The Company accrues its estimated exposure for warranty claims at the time of sale based upon the length of the warranty period, historical experience and other related information known to the Company. Liabilities related to product warranties and extended warranties were not material as of June 30, 2017 and December 31, 2016.

14. Business Reorganization

In June 2017, the Company authorized the closure and consolidation of two production facilities ("the Closures") including a FOBOHA facility located in Muri, Switzerland (60 employees) and an Associated Spring facility (30 employees) into other facilities included within the Industrial segment to leverage capacity, infrastructure and critical resources. The Company recorded a net pre-tax gain of $1,652 in the second quarter of 2017 related to the Closures. This balance includes pension curtailment and settlement gains of $7,217 and $230, respectively, partially offset by employee severance charges of $3,931 and other Closure costs of $1,864, primarily related to asset write-downs. The severance liability was included within Accrued Liabilities as of June 30, 2017. The Company also expects to incur additional costs of approximately $2,000 in 2017 related to the Closures, including costs related to the transfer of work to other existing facilities. Closure costs are recorded primarily within Cost of Sales in the accompanying Consolidated Statements of Income and are reflected in the results of the Industrial segment.

The following table sets forth the change in the liability for the 2017 employee termination actions:

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January 1, 2017	$—
Employee termination benefit costs	3,931
Payments	—
June 30, 2017	$3,931

The majority of this balance is expected to be paid in 2017.

15. Accounting Changes

In July 2015, the FASB amended its guidance related to the measurement of inventory. The amended guidance requires inventory to be measured at the lower of cost and net realizable value and thereby simplifies the current guidance of measuring inventory at the lower of cost or market. The amended guidance is effective prospectively for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2016. The Company adopted the guidance during the first quarter of 2017 and it did not have a material impact on its Consolidated Financial Statements.

In March 2016, the FASB amended its guidance related to the accounting for certain aspects of share-based payments to employees. The amended guidance requires that all tax effects related to share-based payments are recorded at settlement (or expiration) through the income statement, rather than through equity. Cash flows related to excess tax benefits are no longer separately classified as a financing activity apart from other income tax cash flows. The amended guidance also allows for an employer to repurchase additional employee shares for tax withholding purposes without requiring liability accounting and clarifies that all cash payments made to tax authorities on an employee's behalf for withheld shares should be presented as a financing activity on the Consolidated Statements of Cash Flows. The guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2016. Early adoption is permitted, and the Company elected to early adopt in the third quarter of 2016.

The adoption in the third quarter of 2016 required the Company to reflect any adjustments as of January 1, 2016, the beginning of the annual period that includes the interim period of adoption. The most significant impact of adoption was the recognition of excess tax benefits in the provision for income taxes rather than through equity for all periods, through the period of adoption. The adoption resulted in the recognition of excess tax benefits in the provision for income taxes of $15 and $59 related to the three- and six- month periods ended June 30, 2016, respectively, and $306 and $431 in the three- and six- month periods ended June 30, 2017, respectively. The presentation requirements for cash flows related to excess tax benefits and employee taxes paid for withheld shares were applied retrospectively to all periods presented. This resulted in an increase in both net cash provided by operating activities and net cash used by financing activities of $524 for the six- month period ended June 30, 2016.

With respect to the unaudited consolidated financial information of Barnes Group Inc. for the six- month periods ended June 30, 2017 and 2016, PricewaterhouseCoopers LLP reported that they have applied limited procedures in accordance with professional standards for a review of such information. However, their separate report dated July 28, 2017 appearing herein, states that they did not audit and they do not express an opinion on that unaudited consolidated financial information. Accordingly, the degree of reliance on their report should be restricted in light of the limited nature of the review procedures applied. PricewaterhouseCoopers LLP is not subject to the liability provisions of Section 11 of the Securities Act of 1933, as amended, for their report on the unaudited consolidated financial information because that report is not a "report" or a "part" of the registration statement prepared or certified by PricewaterhouseCoopers LLP within the meaning of Sections 7 and 11 of the Securities Act of 1933, as amended.

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Report of Independent Registered Public Accounting Firm
To the Board of Directors and Stockholders of
Barnes Group Inc.:

We have reviewed the accompanying consolidated balance sheet of Barnes Group, Inc. and its subsidiaries as of June 30, 2017, and the related consolidated statements of income and of comprehensive income for the three-month and six-month periods ended June 30, 2017 and June 30, 2016 and the consolidated statement of cash flows for the six-month periods ended June 30, 2017 and June 30, 2016. This interim financial information is the responsibility of the Company's management.

We conducted our review in accordance with the standards of the Public Company Accounting Oversight Board (United States). A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the Public Company Accounting Oversight Board (United States), the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

Based on our review, we are not aware of any material modifications that should be made to the accompanying consolidated interim financial information for it to be in conformity with accounting principles generally accepted in the United States of America.

We previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet as of December 31, 2016, and the related consolidated statements of income, of comprehensive income, of changes in stockholders' equity and of cash flows for the year then ended (not presented herein), and in our report dated February 21, 2017, which included a paragraph describing a change in the manner of accounting for stock-based compensation and a change in the manner of accounting for classification of deferred taxes in the 2016 financial statements, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying consolidated balance sheet information as of December 31, 2016, is fairly stated, in all material respects, in relation to the consolidated balance sheet from which it has been derived.

/s/ PricewaterhouseCoopers LLP
PricewaterhouseCoopers LLP
Hartford, Connecticut
July 28, 2017

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

OVERVIEW

Please refer to the Overview in the Management's Discussion and Analysis of Financial Condition and Results of Operations in the Company's Annual Report on Form 10-K for the year ended December 31, 2016. The Annual Report on Form 10-K and other documents related to the Company are located on the Company's website: www.bginc.com.

Second Quarter 2017 Highlights

In the second quarter of 2017, sales increased by $57.8 million, or 18.8% from the second quarter of 2016, to $364.5 million. Within Industrial, the acquisitions of FOBOHA in August 2016 and Gammaflux in April 2017 contributed sales of $21.4 million and $3.3 million, respectively, during the second quarter of 2017. Organic sales (net sales excluding both foreign currency and acquisition impacts) increased by $34.9 million, or 11.4%, with increases of 11.9% within Industrial and 10.3% within Aerospace. Sales in Industrial were impacted by changes in foreign currency which decreased sales by approximately $1.8 million as the U.S. dollar strengthened against foreign currencies.

Operating income in the second quarter of 2017 increased 20.4% to $57.1 million from the second quarter of 2016 and operating margin increased from 15.5% to 15.7%. Operating income was largely impacted by increased leverage of organic sales in both segments and improved productivity in Aerospace, partially offset by additional costs incurred on certain programs at Industrial.

RESULTS OF OPERATIONS

Net Sales

	Three months ended June 30,				Six months ended June 30,			
(in millions)	2017	2016	Change		2017	2016	Change	
Industrial	$251.8	$204.5	$47.3	23.1%	$479.2	$399.8	$79.4	19.9%
Aerospace	112.7	102.2	10.5	10.3%	227.1	195.2	31.9	16.3%
Total	$364.5	$306.7	$57.8	18.8%	$706.3	$595.0	$111.3	18.7%

The Company reported net sales of $364.5 million in the second quarter of 2017, an increase of $57.8 million, or 18.8%, from the second quarter of 2016. Organic sales increased by $34.9 million, which included increases of $24.4 million and $10.5 million at Industrial and Aerospace, respectively. The increase at Industrial was driven primarily by continued strength in our Nitrogen Gas Products and Molding Solutions business units, whereas growth on newer, more technologically advanced engine platforms increased volumes at the original equipment manufacturing business within Aerospace. Sales within the Aerospace aftermarket businesses also improved during the second quarter of 2017. The acquisitions of FOBOHA in August 2016 and Gammaflux in April 2017 contributed sales of $21.4 million and $3.3 million, respectively, during the second quarter of 2017.
The strengthening of the U.S. dollar against foreign currencies decreased net sales within the Industrial segment by approximately $1.8 million.

The Company reported net sales of $706.3 million in the first half of 2017, an increase of $111.3 million or 18.7%, from the first half of 2016. In Industrial, the acquisitions of FOBOHA in August 2016 and Gammaflux in April 2017 provided sales of $35.9 million and $3.3 million during the first half of 2017. Organic sales increased by $78.0 million, which included increases of $46.1 million and $31.9 million at Industrial and Aerospace, respectively. The strengthening of the U.S. dollar against foreign currencies decreased net sales within the Industrial segment by

approximately $5.9 million.

Expenses and Operating Income

	Three months ended June 30,				Six months ended June 30,			
(in millions)	2017	2016	Change		2017	2016	Change	
Cost of sales	$236.5	$197.2	$39.3	19.9%	$456.3	$383.4	$72.9	19.0%
% sales	64.9 %	64.3 %			64.6 %	64.4 %		
Gross profit [(1)]	$128.0	$109.5	$18.5	16.9%	$250.0	$211.6	$38.4	18.1%
% sales	35.1 %	35.7 %			35.4 %	35.6 %		
Selling and administrative expenses	$70.8	$62.1	$8.8	14.2%	$137.1	$122.6	$14.5	11.8%
% sales	19.4 %	20.2 %			19.4 %	20.6 %		
Operating income	$57.1	$47.5	$9.7	20.4%	$112.9	$89.0	$23.9	26.9%
% sales	15.7 %	15.5 %			16.0 %	15.0 %		

(1) Sales less cost of sales.

Cost of sales in the second quarter of 2017 increased 19.9% from the 2016 period, while gross profit margin decreased from 35.7% in the 2016 period to 35.1% in the 2017 period. Gross margins improved at Aerospace and declined at Industrial. Gross profit improved within both segments, driven primarily by organic growth within each of the business units. At Industrial, gross margins decreased during the 2017 period due to lower productivity, primarily a result of additional costs incurred on certain programs at Engineered Components and a lower margin contribution on the acquisition sales, partially offset by the impact of organic growth within our Molding Solutions and Nitrogen Gas Products business units and a net benefit resulting from from the restructuring actions taken within Industrial. Gross profit during the second quarter of 2017 was negatively impacted by $1.2 million of short-term purchase accounting adjustments related to the acquisition of FOBOHA. Within Aerospace, improvement in gross profit relates primarily to organic growth within each of the businesses, combined with favorable productivity. Increased volumes in the maintenance repair and overhaul and spare parts businesses, in particular, contributed to the gross margin improvement during the second quarter of 2017. Selling and administrative expenses in the second quarter of 2017 increased 14.2% from the 2016 period, due primarily to corresponding increases in sales volumes and incentive compensation during the period, partially offset by the absence of $1.6 million of costs related to a customer termination dispute during the 2016 period. Costs related to the acquisition of FOBOHA, including the amortization of acquired intangible assets, also contributed to the increase in selling and administrative expenses during the 2017 period. As a percentage of sales, selling and administrative costs decreased from 20.2% in the second quarter of 2016 to 19.4% in the 2017 period. Operating income in the second quarter of 2017 increased 20.4% to $57.1 million from the second quarter of 2016 and operating income margin increased slightly from 15.5% to 15.7%, driven by Aerospace.

Cost of sales in the first half of 2017 increased 19.0% from the 2016 period, while gross profit margin decreased slightly from 35.6% in the 2016 period to 35.4% in the 2017 period. Gross margins improved at Aerospace and declined at Industrial. Gross profit improved within both segments, driven primarily by organic growth within each of the business units. At Industrial, gross margins decreased during the first half of 2017 as a result of lower productivity, primarily a result of additional costs incurred on certain programs at Engineered Components and a lower margin contribution on the acquisition sales, partially offset by the impact of organic growth within our Molding Solutions and Nitrogen Gas Products business units and a net benefit resulting from the restructuring actions taken within Industrial. Gross profit during the first half of 2017 was negatively impacted by $1.8 million of short-term purchase accounting adjustments related to the acquisition of FOBOHA. Within Aerospace, improvement in gross profit relates primarily to organic growth within each of the businesses, combined with favorable productivity. Increased volumes in the maintenance repair and overhaul and spare parts businesses, in particular, contributed to the gross margin improvement during the first half of 2017. Selling and administrative expenses in the first half of 2017 increased 11.8% from the 2016 period, due primarily to corresponding increases in sales volumes and incentive compensation during the period, partially offset by the absence of $2.4 million of costs related to a customer termination dispute during the first half of 2016. As a percentage of sales, selling and administrative costs decreased from 20.6% in the

first half of 2016 to 19.4% in the 2017 period. Operating income in the first half of 2017 increased 26.9% to $112.9 million from the first half of 2016 and operating income margin increased from 15.0% to 16.0%.

Interest expense

Interest expense increased by $0.7 million in the second quarter of 2017, as compared with the prior year period, primarily as a result of higher interest rates. Interest expense increased by $1.1 million in the first half of 2017, as compared with the prior year period, primarily as a result of higher interest rates.

Other expense (income), net
Other expense (income), net in the second quarter of 2017 was $0.4 million compared to $(0.8) million in the second quarter of 2016. Foreign currency losses of $0.3 million in the second quarter of 2017 compared with foreign currency gains of $0.7 million in the second quarter of 2016. Other expense (income), net in the first half of 2017 was $0.4 million compared to $(0.6) million in the first half of 2016. Foreign currency losses of $0.3 million in the first half of 2017 compared with foreign currency gains of $0.6 million in the first half of 2016.

Income Taxes
The Company merged certain of its Swiss operating legal entities during the second quarter of 2017 (the "merger"). Certain of these entities included businesses with deferred tax assets that were offset by valuation allowances. As a result of the merger, the Company reevaluated the valuation allowances and deferred tax assets related to these businesses and determined such allowances were no longer required as the merged entities would more likely than not utilize previously unbenefitted net operating losses that would have otherwise expired. In addition, certain deferred tax assets were adjusted as a result of higher income tax rates. The impacts of these adjustments are treated as discrete items in the second quarter of 2017 resulting in reductions in tax expense of $5.9 million and $0.5 million, respectively, in the first half of 2017.

The Company's effective tax rate for the first half of 2017 was 21.1% compared with 25.9% in the first half of 2016 and 25.7% for the full year 2016. The decrease in the first half of 2017 effective tax rate from the full year 2016 rate is primarily due to the adjustment of certain valuation reserves and other benefits resulting from the merger of legal entities in Switzerland, partially offset by the expiration of certain tax holidays, the decrease in the excess tax benefit on stock awards and the projected change in the mix of earnings attributable to higher-taxing jurisdictions.

The Aerospace and Industrial segments were previously awarded international tax holidays. All significant tax holidays for which the Company currently receives benefit are expected to expire in the fourth quarter of 2017.

Income and Income per Share

	Three months ended June 30,				Six months ended June 30,			
(in millions, except per share)	2017	2016	Change		2017	2016	Change	
Net income	$45.0	$33.2	$11.8	35.6%	$83.3	$62.1	$21.3	34.3 %
Net income per common share:								
Basic	$0.83	$0.61	$0.22	36.1%	$1.54	$1.14	$0.40	35.1 %
Diluted	0.82	0.61	0.21	34.4%	1.52	1.14	0.38	33.3 %
Weighted average common shares outstanding:								
Basic	54.2	54.2	—	— %	54.2	54.2	—	(0.1)%
Diluted	54.7	54.6	0.1	0.1 %	54.7	54.7	—	— %

Basic and diluted net income per common share increased for the three- and six-month periods as compared to the 2016 periods, consistent with the changes in net income for the periods. Basic and diluted weighted average common shares outstanding were flat. Share repurchases of 550,994 and 107,000 shares during 2016 and the first six months of 2017, respectively, as part of the Company's repurchase program were offset by the grant and issuance of additional shares for employee stock plans.

Financial Performance by Business Segment

Industrial

Three months ended June 30,	Six months ended June 30,

(in millions)	2017	2016	Change		2017	2016	Change	
Sales	$251.8	$204.5	$47.3	23.1%	$479.2	$399.8	$79.4	19.9%
Operating profit	37.4	34.8	2.6	7.3 %	70.9	64.5	6.4	9.9 %
Operating margin	14.8 %	17.0 %			14.8 %	16.1 %		

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Sales at Industrial were $251.8 million in the second quarter of 2017, a $47.3 million increase from the second quarter of 2016. The acquisitions of FOBOHA in August 2016 and Gammaflux in April 2017 contributed sales of $21.4 million and $3.3 million, respectively, during the second quarter of 2017. Organic sales increased by $24.4 million, or 11.9%, during the 2017 period, driven primarily by continued strength in our Nitrogen Gas Products and Molding Solutions business units. A continuation of favorable demand trends in our tool and die and transportation end-markets have contributed to the organic growth within these business units. Foreign currency decreased sales by approximately $1.8 million as the U.S. dollar strengthened against foreign currencies. During the first half of 2017, this segment reported sales of $479.2 million, a 19.9% increase from the first half of 2016. Organic sales increased by $46.1 million, or 11.5%, during the 2017 period, primarily a result of continued strength in our Nitrogen Gas Products and Molding Solutions businesses. Acquisitions provided sales of $39.2 million during the first half of 2017. The impact of foreign currency decreased sales by approximately $5.9 million as the U.S. dollar strengthened against foreign currencies.

Operating profit in the second quarter of 2017 at Industrial was $37.4 million, an increase of $2.6 million from the second quarter of 2016. Operating profit was impacted primarily by increased sales volumes, largely a result of stronger tool and die and transportation end-markets, partially offset by lower productivity, resulting primarily from increased costs incurred on certain programs within Engineered Components. The second quarter of 2017 also includes a pre-tax net benefit of $1.7 million that resulted from restructuring actions, partially offset by $1.2 million of short-term purchase accounting adjustments related to the acquisition of FOBOHA. See Note 14 to the Consolidated Financial Statements for further discussion related to the restructuring actions. Operating margin decreased from 17.0% in the 2016 period to 14.8% in the 2017 period due to the above items. Lower margins at FOBOHA also impacted the second quarter of 2017. Operating profit in the first half of 2017 at Industrial was $70.9 million, an increase of $6.4 million from the first half of 2016. As noted above, operating profit benefited from increased sales volumes, partially offset by lower productivity. This period also includes $1.8 million of short-term purchase accounting adjustments related to the acquisition of FOBOHA, primarily offset by the $1.7 million benefit resulting from the restructuring actions. Operating margin decreased from 16.1% in the 2016 period to 14.8% in the 2017 period primarily as a result of these items. Lower margins at FOBOHA also impacted the first half of 2017.

Outlook: In the Industrial manufacturing businesses, management is focused on generating organic sales growth through the introduction of new products and services and by leveraging the benefits of the diversified products and industrial end-markets in which its businesses have a global presence. Our ability to generate sales growth is subject to economic conditions in the global markets served by all of our businesses. For general industrial end-markets, manufacturing Purchasing Managers Indexes ("PMIs") above 50 in China, North America and Europe are positive signs. Within China, we have seen a strengthening in orders that began during the middle of 2016 and that is continuing into the third quarter of 2017, indicating strength within the transportation markets. Global forecasted production for light vehicles is expected to grow nominally in 2017, however production is beginning to decline modestly within the North American market. Within our Molding Solutions businesses, global markets remain healthy. For the Molding Solutions businesses in the second half of 2017, we anticipate favorable demand trends to continue within the medical and personal care hot runner markets and the packaging and medical mold markets. Within our molds product line, orders continued to improve during the second quarter of 2017. As noted above, our second quarter sales were negatively impacted by fluctuations in foreign currencies of $1.8 million. To the extent that the U.S. dollar remains strong as compared with the other foreign currencies, our sales may continue to be unfavorably impacted by foreign currency relative to the prior year periods. The relative impact on operating profit is not expected to be as significant as the impact on sales as most of our businesses have expenses primarily denominated in local currencies, where their revenues reside. The Company also remains focused on sales growth through acquisition and expanding geographic reach. Strategic investments in new technologies, manufacturing processes and product development are expected to provide incremental benefits over the long term.

Operating profit is largely dependent on the sales volumes and mix of the businesses in the segment. Management continues to focus on improving profitability and expanding margins through leveraging organic sales growth, acquisitions, pricing initiatives, global sourcing and productivity. We continue to evaluate market conditions and remain proactive in managing costs. Costs associated with new product and process introductions, restructuring initiatives, strategic investments and the integration of acquisitions may negatively impact operating profit.

Aerospace

	Three months ended June 30,				Six months ended June 30,			
(in millions)	2017	2016	Change		2017	2016	Change	
Sales	$112.7	$102.2	$10.5	10.3%	$227.1	$195.2	$31.9	16.3%
Operating profit	19.7	12.6	7.1	56.5%	42.0	24.5	17.5	71.6%
Operating margin	17.5 %	12.4 %			18.5 %	12.5 %		

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The Aerospace segment reported sales of $112.7 million in the second quarter of 2017, a 10.3% increase from the second quarter of 2016. Sales increased within all of the Aerospace businesses. The original equipment manufacturing ("OEM") business continued to transition from the manufacture of components on legacy engine platforms to newer, more technologically advanced platforms. Increased volume generated by newer programs was only partially offset by lower volumes and the impact of lower pricing on more mature engine platforms. Sales within the aftermarket repair and overhaul ("MRO") business also increased during the second quarter of 2017 as we continue to obtain additional sales volume from existing customers, a trend that began during the second half of 2016. Volumes within the spare parts business also increased during the 2017 period. Sales within the segment are largely denominated in U.S. dollars and therefore were not impacted by changes in foreign currency. During the first half of 2017, this segment reported sales of $227.1 million, a 16.3% increase from the first half of 2016, driven by growth within each of the Aerospace businesses. Growth during the first half of 2017 also resulted from sales in newer engine programs within OEM and additional volume from existing customers within aftermarket.

Operating profit at Aerospace in the second quarter of 2017 increased 56.5% from the second quarter of 2016 to $19.7 million. The operating profit increase resulted from the increased volumes discussed above, coupled with favorable productivity, resulting from our ability to leverage production volumes, partially offset by price deflation and increased employee related costs, primarily due to incentive compensation. The second quarter of 2016 included $1.6 million of costs related to a contract termination dispute that was resolved favorably by the end of 2016. Operating margin increased from 12.4% in the 2016 period to 17.5% in the 2017 period, primarily as a result of these items. Increased volumes within the higher margin aftermarket businesses were also a key driver in the operating margin increase during this period. Operating profit in the first half of 2017 increased 71.6% from the first half of 2016 to $42.0 million, also driven by higher sales volumes and favorable productivity. The first half of 2016 included $2.4 million of costs related to the contract termination dispute.

Outlook: Sales in the Aerospace OEM business are based on the general state of the aerospace market driven by the worldwide economy and are supported by its order backlog through participation in certain strategic commercial and military engine and airframe programs. Over the next several years, the Company expects strength in demand for new engines, driven by an expected increase in commercial aircraft production levels. The Company expects further shifts in the production mix from some of its legacy engine programs to the continual ramping of several new engine programs. Backlog at OEM was $673.2 million at June 30, 2017, an increase of 7.5% since December 31, 2016, at which time backlog was $626.3 million. This increase in first half of 2017 orders primarily reflects an expanded time horizon on certain engine programs. Approximately 50% of OEM backlog is expected to ship in the next 12 months. The Aerospace OEM business may be impacted by changes in the content levels on certain platforms, changes in customer sourcing decisions, adjustments to customer inventory levels, commodity availability and pricing, changes in production schedules of specific engine and airframe programs, redesign of parts, quantity of parts per engine, cost schedules agreed to under contract with the engine manufacturers, as well as the pursuit and duration of new programs. Sales in the Aerospace aftermarket business may be impacted by fluctuations in end-market demand, inventory management and changes in customer sourcing, deferred or limited maintenance activity during engine shop visits and the use of surplus (used) material during the engine repair and overhaul process. End markets are expected to grow based on the long term underlying fundamentals of the aerospace industry. Management continues to believe its Aerospace aftermarket business is competitively positioned based on well-established long-term customer relationships, including maintenance and repair contracts in the MRO business and long-term Revenue Sharing Programs ("RSPs") and Component Repair Programs ("CRPs"), expanded capabilities and current capacity levels. The MRO business may be potentially impacted by airlines that closely manage their aftermarket costs as engine performance and quality improves. Fluctuations in fuel costs and their impact on airline profitability and behaviors within the aerospace industry could also impact levels and frequency of aircraft maintenance and overhaul activities, and airlines' decisions on maintaining, deferring or canceling new aircraft purchases, in part based on the value associated with new fuel efficient technologies.

Management is focused on growing operating profit at Aerospace primarily through leveraging organic sales growth, strategic investments, new product and process introductions, and productivity. Operating profit is expected to be affected by the impact of changes in sales volume, mix and pricing, particularly as they relate to the highly profitable aftermarket RSP spare parts business, and investments made in each of its businesses. Costs associated with new product and process introductions, the physical transfer of work to lower cost manufacturing regions, additional productivity initiatives and restructuring activities may also negatively impact operating profit.

LIQUIDITY AND CAPITAL RESOURCES

Management assesses the Company's liquidity in terms of its overall ability to generate cash to fund its operating and investing activities. Of particular importance in the management of liquidity are cash flows generated from operating activities, capital

expenditure levels, dividends, capital stock transactions, effective utilization of surplus cash positions overseas and adequate lines of credit.

The Company believes that its ability to generate cash from operations in excess of its internal operating needs is one of its financial strengths. Management continues to focus on cash flow and working capital management, and anticipates that operating activities in 2017 will generate sufficient cash to fund operations. The Company closely monitors its cash generation, usage and preservation including the management of working capital to generate cash.

In February 2017, the Company and certain of its subsidiaries entered into the fourth amendment of its fifth amended and restated revolving credit agreement (the “Amended Credit Agreement”) and retained Bank of America, N.A. as the Administrative Agent for the lenders. The Amended Credit Agreement increases the facility from $750.0 million to $850.0 million and extends the maturity date from September 2018 to February 2022. The Amended Credit Agreement also increases the existing accordion feature from $250.0 million, allowing the Company to now request additional borrowings of up to $350.0 million. The Company may exercise the accordion feature upon request to the Administrative Agent as long as an event of default has not occurred or is not continuing. The borrowing availability of $850.0 million, pursuant to the terms of the Amended Credit Agreement, allows for multi-currency borrowing which includes euro, British pound sterling or Swiss franc borrowing, up to $600.0 million. Depending on the Company’s consolidated leverage ratio, and at the election of the Company, borrowings under the Amended Credit Agreement will bear interest at either LIBOR plus a margin of between 1.10% and 1.70% or the base rate, as defined in the Amended Credit Agreement, plus a margin of 0.10% to 0.70%.

In October 2014, the Company entered into a Note Purchase Agreement (“Note Purchase Agreement”), among the Company and New York Life Insurance Company, New York Life Insurance and Annuity Corporation and New York Life Insurance and Annuity Corporation Institutionally Owned Life Insurance Separate Account, as purchasers, for the issuance of $100.0 million aggregate principal amount of 3.97% senior notes due October 17, 2024 (the “3.97% Senior Notes”). The 3.97% Senior Notes are senior unsecured obligations of the Company and will pay interest semi-annually on April 17 and October 17 of each year at an annual rate of 3.97%. The 3.97% Senior Notes will mature on October 17, 2024 unless earlier prepaid in accordance with their terms. Subject to certain conditions, the Company may, at its option, prepay all or any part of the 3.97% Senior Notes in an amount equal to 100% of the principal amount of the 3.97% Senior Notes so prepaid, plus any accrued and unpaid interest to the date of prepayment, plus the Make-Whole Amount, as defined in the Note Purchase Agreement, with respect to such principal amount being prepaid. The Note Purchase Agreement contains customary affirmative and negative covenants that are similar to the covenants required under the Amended Credit Agreement, as discussed below. At June 30, 2017, the Company was in compliance with all covenants under the Note Purchase Agreement.

The Company's borrowing capacity remains limited by various debt covenants in the Amended Credit Agreement and the Note Purchase Agreement (the "Agreements"). The Agreements require the Company to maintain a ratio of Consolidated Senior Debt, as defined, to Consolidated EBITDA, as defined, of not more than 3.25 times ("Senior Debt Ratio"), a ratio of Consolidated Total Debt, as defined, to Consolidated EBIDA of not more than 3.75 times and a ratio of Consolidated EBITDA to Consolidated Cash Interest Expense, as defined, of not less than 4.25, in each case at the end of each fiscal quarter; provided that the debt to EBITDA ratios are permitted to increase for a period of four fiscal quarters after the closing of certain permitted acquisitions.

At June 30, 2017, the Company was in compliance with all covenants under the Agreements. The Company's most restrictive financial covenant is the Senior Debt Ratio which requires the Company to maintain a ratio of Consolidated Senior Debt to Consolidated EBITDA of not more than 3.25 times at June 30, 2017. The actual ratio at June 30, 2017 was 1.59 times.

During the first half of 2017, the Company repurchased 0.1 million shares of the Company's stock at a cost of $5.4 million.

Operating cash flow may be supplemented with external borrowings to meet near-term business expansion needs and the Company's current financial commitments. The Company has assessed its credit facilities in conjunction with the Amended Credit Facility and currently expects that its bank syndicate, comprised of 14 banks, will continue to support its Amended Credit Agreement which matures in February 2022. At June 30, 2017, the Company had $460.2 million unused and available for borrowings under its $850.0 million Amended Credit Facility, subject to covenants. At June 30, 2017, additional borrowings of $691.0 million of Total Debt and $531.4 million of Senior Debt, would have been allowed under the financial covenants. The Company intends to use borrowings under its Amended Credit Facility to support the Company's ongoing growth initiatives. The Company believes its credit facilities and access to capital markets, coupled with cash generated from operations, are adequate for its anticipated future requirements.

The Company had $10.0 million in borrowings under short-term bank credit lines at June 30, 2017.

In 2012, the Company entered into five-year interest rate swap agreements (the "swaps") transacted with three banks which together convert the interest on the first $100.0 million of the Company's one-month LIBOR-based borrowings from a variable rate plus the borrowing spread to a fixed rate of 1.03% plus the borrowing spread, for the purpose of mitigating its exposure to variable interest rates. The swaps expired on April 28, 2017. The Company entered into a new interest rate swap agreement (the "swap") that commenced on April 28, 2017, with one bank, and converted the interest on the first $100.0 million of the Company's one-month LIBOR-based borrowings from a variable rate plus the borrowing spread to a fixed rate of 1.92% plus the borrowing spread. The swap expires on January 31, 2022. At June 30, 2017 and December 31, 2016, the Company's total borrowings were comprised of approximately 41% fixed rate debt and 59% variable rate debt.

At June 30, 2017, the Company held $104.8 million in cash and cash equivalents, the majority of which was held by foreign subsidiaries. These amounts have no material regulatory or contractual restrictions and are expected to primarily fund international investments.

In May 2017, the Company made a $5.0 million discretionary contribution to its U.S Qualified pension plans. The Company currently does not plan to make any additional discretionary contributions to its Qualified U.S. Plans, however an incremental $5.0 million of contributions are expected to be made into its U.S. Non-qualified and international pension plans throughout 2017.

Any future acquisitions are expected to be financed through internal cash, borrowings and equity, or a combination thereof. Additionally, we may from time to time seek to retire or repurchase our outstanding debt through cash purchases and/or exchanges for equity securities, in open market purchases, under a Rule 10b5-1 trading plan, privately negotiated transactions or otherwise. Such repurchases or exchanges, if any, will depend on prevailing market conditions, our liquidity requirements, contractual restrictions and other factors.

Cash Flow

	Six months ended June 30,		
(in millions)	2017	2016	Change
Operating activities	$102.4	$97.0	$5.4
Investing activities	(38.9)	(25.0)	(13.9)
Financing activities	(29.0)	(55.3)	26.3
Exchange rate effect	3.9	0.7	3.2
Increase in cash	$38.4	$17.4	$21.0

Operating activities provided $102.4 million in the first six months of 2017 compared to $97.0 million in the first six months of 2016. Operating cash flows in the 2017 period were positively impacted by improved operating results partially offset by an increase in cash used for working capital. Cash flows in the 2016 and 2017 periods were impacted by outflows of $15.0 million and $5.0 million, respectively, related to discretionary contributions to the U.S. Qualified pension plans.

Investing activities used $38.9 million and $25.0 million in the first six months of 2017 and 2016, respectively. Investing activities in the 2017 period include capital expenditures of $27.3 million compared to $23.0 million in the 2016 period. The Company expects capital spending in 2017 to approximate $55 million. Investing activities in the first six months of 2017 also included an outflow of $8.8 million to fund the acquisition of Gammaflux. During the 2017 period, a $3.0 million payment related to an Aerospace agreement was included in Other Investing activities. Investing activities in the first six months of 2016 included a payment of $1.5 million related to the post-acquisition closing adjustment of Thermoplay and a payment of $0.9 million that was required pursuant to the first Component Repair Program.

Financing activities in the first six months of 2017 included a net increase in borrowings of $4.5 million compared to a net decrease of $30.8 million in the comparable 2016 period. Proceeds from the issuance of common stock were $1.1 million and $0.3 million in the 2017 and 2016 periods, respectively. During the first six months of 2017 and 2016, the Company repurchased 0.1 million shares and 0.2 million shares, respectively, of the Company's stock at a cost of $5.4 million and $8.0 million, respectively. Total cash used to pay dividends increased to $14.5 million in the 2017 period from $13.5 million in the 2016 period. Other financing cash flows during the first six months of 2017 and 2016 include $11.8 million and $2.8 million, respectively, of net cash payments resulting from the settlement of foreign currency hedges related to intercompany financing. Cash used for financing activities in the 2017 period also includes $2.5 million of deferred financing fees paid in connection with the Amended Credit Agreement.

The Company maintains borrowing facilities with banks to supplement internal cash generation. At June 30, 2017, $389.8 million was borrowed at an average interest rate of 2.32% under the Company's $850.0 million Amended Credit Facility which matures in February 2022. In addition, as of June 30, 2017, the Company had $10.0 million in borrowings under short-term bank credit lines. At June 30, 2017, the Company's total borrowings were comprised of 41% fixed rate debt and 59% variable rate debt. The interest payments on $100.0 million of the variable rate interest debt have been converted into payment of fixed interest plus the borrowing spread under the terms of the interest rate swap that was executed in April 2017.

Debt Covenants

As noted above, borrowing capacity is limited by various debt covenants in the Company's debt agreements. Following is a reconciliation of Consolidated EBITDA, a key metric in the debt covenants, to the Company's net income (in millions):

	Four fiscal quarters ended June 30, 2017
Net income	$ 156.9
Add back:	
Interest expense	13.0
Income taxes	47.6
Depreciation and amortization	87.0
Adjustment for non-cash stock based compensation	10.2
Adjustment for acquired businesses	1.6
Amortization of FOBOHA acquisition inventory step-up	2.9
Other adjustments	0.1
Consolidated EBITDA, as defined	$ 319.2
Consolidated Senior Debt, as defined, as of June 30, 2017	$ 506.1
Ratio of Consolidated Senior Debt to Consolidated EBITDA	1.59
Maximum	3.25
Consolidated Total Debt, as defined, as of June 30, 2017	$ 506.1
Ratio of Consolidated Total Debt to Consolidated EBITDA	1.59
Maximum	3.75
Consolidated Cash Interest Expense, as defined, as of June 30, 2017	$ 13.3
Ratio of Consolidated EBITDA to Consolidated Cash Interest Expense	24.05
Minimum	4.25

The Amended Credit Agreement allows for certain adjustments within the calculation of the financial covenants. The adjustment for acquired businesses reflects the unaudited pre-acquisition operations of FOBOHA for the period from July 1, 2016 through August 31, 2016. Other adjustments consist primarily of net gains on the sale of assets, due diligence and transaction expenses as permitted under the Amended Credit Agreement and net gains resulting from the restructuring actions taken during 2017. The Company's financial covenants are measured as of the end of each fiscal quarter. At June 30, 2017, additional borrowings of $691.0 million of Total Debt and $531.4 million of Senior Debt would have been allowed under the covenants. Senior Debt includes primarily the borrowings under the Amended Credit Facility, the 3.97% Senior Notes and the borrowings under the lines of credit. The Company's unused committed credit facilities at June 30, 2017 were $460.2 million.

OTHER MATTERS

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant accounting policies are disclosed in Note 1 of the Consolidated Financial Statements in the Company's Annual Report on Form 10-K for the year ended December 31, 2016. The most significant areas involving management judgments and estimates are described in Management's Discussion and Analysis of Financial Condition and Results of Operations in the Company's Annual Report on Form 10-K for the year ended December 31, 2016. There have been no material changes to such judgments and estimates. Actual results could differ from those estimates.

Critical Accounting Policies

Goodwill and Indefinite-Lived Intangible Assets: Goodwill and indefinite-lived intangible assets are subject to impairment testing annually or earlier if an event or change in circumstances indicates that the fair value of a reporting unit has been reduced below its carrying value. Management completes their annual impairment assessments during the second quarter of each year as of April 1. The Company utilizes the option to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test in accordance with the applicable accounting standards. Under the qualitative assessment, management considers relevant events and circumstances including but not limited to macroeconomic conditions, industry and market considerations, overall unit performance and events directly affecting a unit. If the Company determines that the two-step quantitative impairment test is required, management estimates the fair value of the reporting unit primarily using the income approach, which reflects management’s cash flow projections, and also evaluates the fair value using the market approach. Inherent in management’s development of cash flow projections are assumptions and estimates, including those related to future earnings and growth and the weighted average cost of capital. Based on our second quarter assessment the estimated fair value of all reporting units significantly exceeded their carrying values and there was no goodwill impairment at any reporting units through April 1, 2017. 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 as a result of both Company-specific and overall economic conditions. Management’s quantitative assessment includes a review of the potential impacts of current and projected market conditions from a market participant’s perspective on reporting units’ projected cash flows, growth rates and cost of capital to assess the likelihood of whether the fair value would be less than the carrying value. If the fair values were to fall below the carrying values, a non-cash impairment charge to income from operations could result. The Company also completed its annual impairment testing of its trade names, indefinite-lived intangible assets, in the second quarter of 2017 and determined that there were no impairments through April 1, 2017.

Recent Accounting Changes

In May 2014, the Financial Accounting Standards Board ("FASB") amended its guidance related to revenue recognition. The amended guidance establishes a single comprehensive model for companies to use in accounting for revenue arising from contracts with customers and will supersede most of the existing revenue recognition guidance, including industry-specific guidance. The amended guidance clarifies that an entity recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In applying the amended guidance, an entity will (1) identify the contract(s) with a customer; (2) identify the performance obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to the contract’s performance obligations; and (5) recognize revenue when (or as) the entity satisfies a performance obligation. The amended guidance applies to all contracts with customers except those that are within the scope of other topics in the FASB Accounting Standards Codification. The amended guidance was initially effective for annual reporting periods (including interim periods within those periods) beginning after December 15, 2016 for public companies. On July 9, 2015, the FASB approved a deferral of the effective date by one year to December 15, 2017 for annual reporting periods beginning after that date. The FASB also permitted early adoption of the standard, but not before the original effective date of December 15, 2016. Entities have the option of using either a full retrospective or modified retrospective approach to the amended guidance. The Company currently plans to adopt the amended guidance using the modified retrospective approach on January 1, 2018 at which time it becomes effective for the Company.

In 2015, we developed a project plan and established a cross-functional team to implement the amended guidance. We are completing the review of our contracts and evaluating the impact of the amended guidance on each of our primary revenue streams. While we are continuing to assess all potential impacts of the amended guidance, we currently believe that the most significant impact relates to the timing of revenue recognition, presentation and disclosures. We expect that a substantial portion of our businesses will continue to recognize revenue on a "point-in-time basis". We

also expect, however, that a portion of our businesses with customized products or contracts in which we perform work on a customer-owned asset will require the use of an "over time" recognition model as certain of our contracts may meet one or more of the criteria established in the amended guidance. We anticipate utilizing the cost-to-cost input method to measure progress towards completion for contracts on an over time revenue recognition model. In addition, we are in the process of identifying appropriate changes to our business processes, systems and controls to support recognition and disclosure requirements under the new standard. We have begun designing changes to such business processes, controls and systems and plan to implement the changes over the remainder of 2017.

In February 2016, the FASB amended its guidance related to lease accounting. The amended guidance requires lessees to recognize a majority of its leases on the balance sheet as a right-to-use asset. Lessees are permitted to make an accounting policy election to not recognize an asset and liability for leases with a term of twelve months or less. Lease expense will be

recorded in a manner similar to current accounting. The guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Early adoption is permitted. The Company is currently evaluating the guidance to determine the impact it will have on its Consolidated Financial Statements. The Company anticipates the amended guidance will have a material impact on its assets and liabilities due to the addition of right-of-use assets and lease liabilities to the balance sheet; however, it does not expect the amended guidance to have a material impact on its cash flows or results of operations.

In August 2016, the FASB amended its guidance related to the Statement of Cash Flows. The amended guidance clarifies how certain cash receipts and cash payments should be presented on the statement of cash flows, with focus on eight specific areas in which cash flows have, in practice, been presented inconsistently. The guidance is effective for annual periods beginning after December 15, 2017 and interim periods within those fiscal years. Early adoption is permitted. The Company does not expect the amended guidance to have a material impact on its cash flows.

In January 2017, the FASB amended its guidance related to goodwill impairment testing. The amended guidance simplifies the subsequent measurement of goodwill, eliminating Step 2 from the goodwill impairment test. Under the amended guidance, companies should perform their annual goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. Companies would recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value, assuming the loss recognized does not exceed the total amount of goodwill for the reporting unit. The amended guidance is effective for fiscal years beginning after December 15, 2019. Early adoption is permitted. The adoption of this amended guidance is not expected to have a material impact on the Company's Consolidated Financial Statements.

In March 2017, the FASB amended its guidance related to the presentation of pension costs. The amended guidance requires the bifurcation of net periodic benefit cost for pension and other postretirement plans. The service cost component of expense will be presented with other employee compensation costs in operating income, consistent with the current guidance. The other components of expense, however, will be reported separately outside of operating income. The guidance is effective for annual periods beginning after December 15, 2017 and interim periods within that reporting period. Early adoption is permitted. The Company is currently evaluating the amended guidance to determine the impact it will have on its Consolidated Financial Statements. The Company does not expect that the adoption of this amended guidance will have a material impact on the Company's Consolidated Financial Statements on an ongoing basis. The Company's retrospective adoption, though, will likely have an impact on certain classifications in the 2017 Consolidated Statements of Income, mainly due to the pension curtailment and settlement gains that were recorded in operating income in the second quarter of 2017. See Note 9 of the Consolidated Financial Statements.

EBITDA

EBITDA for the first half of 2017 was $158.0 million compared to $128.2 million in the first half of 2016. EBITDA is a measurement not in accordance with accounting principles generally accepted in the United States of America ("GAAP"). The Company defines EBITDA as net income plus interest expense, income taxes and depreciation and amortization which the Company incurs in the normal course of business. The Company does not intend EBITDA to represent cash flows from operations as defined by GAAP, and the reader should not consider it as an alternative to net income, net cash provided by operating activities or any other items calculated in accordance with GAAP, or as an indicator of the Company's operating performance. The Company's definition of EBITDA may not be comparable with EBITDA as defined by other companies. Accordingly, the measurement has limitations depending on its use. The Company believes EBITDA is commonly used by financial analysts and others in the industries in which the Company operates and, thus, provides useful information to investors.

Following is a reconciliation of EBITDA to the Company's net income (in millions):

	Six months ended June 30,	
	2017	2016
Net income	$83.3	$62.1
Add back:		
Interest expense	6.9	5.8
Income taxes	22.3	21.7
Depreciation and amortization	45.5	38.6
EBITDA	$158.0	$128.2

FORWARD-LOOKING STATEMENTS

Certain of the statements in this quarterly report contain forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995. Forward-looking statements often address our expected future operating and financial performance and financial condition, and often contain words such as "anticipate," "believe," "expect," "plan," "estimate," "project," and similar terms. These forward-looking statements do not constitute guarantees of future performance and are subject to a variety of risks and uncertainties that may cause actual results to differ materially from those expressed in the forward-looking statements. These include, among others: difficulty maintaining relationships with employees, including unionized employees, customers, distributors, suppliers, business partners or governmental entities; failure to successfully negotiate collective bargaining agreements or potential strikes, work stoppages or other similar events; difficulties leveraging market opportunities; changes in market demand for our products and services; rapid technological and market change; the ability to protect intellectual property rights; introduction or development of new products or transfer of work; higher risks in global operations and markets; the impact of intense competition; acts of terrorism, cybersecurity attacks or intrusions that could adversely impact our businesses; uncertainties relating to conditions in financial markets; currency fluctuations and foreign currency exposure; future financial performance of the industries or customers that we serve; our dependence upon revenues and earnings from a small number of significant customers; a major loss of customers; inability to realize expected sales or profits from existing backlog due to a range of factors, including changes in customer sourcing decisions, material changes, production schedules and volumes of specific programs; the impact of government budget and funding decisions; changes in raw material or product prices and availability; integration of acquired businesses; restructuring costs or savings; the continuing impact of prior acquisitions and divestitures; and any other future strategic actions, including acquisitions, divestitures, restructurings, or strategic business realignments, and our ability to achieve the financial and operational targets set in connection with any such actions; the outcome of pending and future legal, governmental, or regulatory proceedings and contingencies and uninsured claims; future repurchases of common stock; future levels of indebtedness; and numerous other matters of a global, regional or national scale, including those of a political, economic, business, competitive, environmental, regulatory and public health nature; and other risks and uncertainties described in documents filed with or furnished to the Securities and Exchange Commission ("SEC") by the Company, including, among others, those in the Management's Discussion and Analysis of Financial Condition and Results of Operations and Risk Factors sections of the Company's filings. The Company assumes no obligation to update its forward-looking statements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

For discussion of the Company’s exposure to market risk, refer to the Company’s Annual Report on Form 10-K for the year ended December 31, 2016.

Item 4. Controls and Procedures

Management, including the Company's President and Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of the design and operation of the Company's disclosure controls and procedures as of the end of the period covered by this report. Based upon, and as of the date of, our evaluation, the President and Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures were effective, in all material respects and designed to provide reasonable assurance that information required to be disclosed in the reports the Company files and submits under the Securities Exchange Act of 1934, as amended, is (i) recorded, processed, summarized and reported as and when required and (ii) is accumulated and communicated to the Company's management, including our President and Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting during the Company's second fiscal quarter of 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We are subject to litigation from time to time in the ordinary course of business and various other suits, proceedings and claims are pending against us and our subsidiaries. While it is not possible to determine the ultimate disposition of each of these proceedings and whether they will be resolved consistent with our beliefs, we expect that the outcome of these proceedings, individually or in the aggregate, will not have a material adverse effect on our consolidated financial position, cash flows or results of operations.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

(c) Issuer Purchases of Equity Securities

Period	(a) Total Number of Shares (or Units) Purchased		(b) Average Price Paid Per Share (or Unit)	(c) Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs	(d) Maximum Number of Shares (or Units) that May Yet Be Purchased Under the Plans or Programs[2]
April 1-30, 2017	128		$ 51.05	—	4,342,006
May 1-31, 2017	1,341		$ 55.41	—	4,342,006
June 1-30, 2017	911		$ 58.37	—	4,342,006
Total	2,380	(1)	$ 56.31	—	

(1) All acquisitions of equity securities during the second quarter of 2017 were the result of the operation of the terms of the Company's stockholder-approved equity compensation plans and the terms of the equity rights granted pursuant to those plans to pay for the related income tax upon issuance of shares. The purchase price of a share of stock used for tax withholding is the market price on the date of issuance.

(2) The program was publicly announced on October 20, 2011 (the "2011 Program") authorizing repurchase of up to 5.0 million shares of common stock. At December 31, 2015, 1.1 million shares of common stock had not been purchased under the 2011 Program. On February 10, 2016, the Board of Directors of the Company increased the number of shares authorized for repurchase under the 2011 Program by 3.9 million shares of common stock (5.0 million authorized, in total). The 2011 Program permits open market purchases, purchases under a Rule 10b5-1 trading plan and privately negotiated transactions.

Item 6. Exhibits

Exhibit 15	Letter regarding unaudited interim financial information.
Exhibit 31.1	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
Exhibit 31.2	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
Exhibit 32	Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
Exhibit 101.INS	XBRL Instance Document.
Exhibit 101.SCH	XBRL Taxonomy Extension Schema Document.
Exhibit 101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
Exhibit 101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
Exhibit 101.LAB	XBRL Taxonomy Extension Label Linkbase Document.
Exhibit 101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

SIGNATURES

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

Barnes Group Inc.
(Registrant)

Date: July 28, 2017 /s/ CHRISTOPHER J. STEPHENS, JR.
Christopher J. Stephens, Jr.
Senior Vice President, Finance
Chief Financial Officer
(Principal Financial Officer)

Date: July 28, 2017 /s/ MARIAN ACKER
Marian Acker
Vice President, Controller
(Principal Accounting Officer)

EXHIBIT INDEX
Barnes Group Inc.
Quarterly Report on Form 10-Q
For the Quarter ended June 30, 2017

Exhibit No.	Description	Reference
15	Letter regarding unaudited interim financial information.	Filed with this report.
31.1	Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed with this report.
31.2	Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed with this report.
32	Certification pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Furnished with this report.
Exhibit 101.INS	XBRL Instance Document.	Filed with this report.
Exhibit 101.SCH	XBRL Taxonomy Extension Schema Document.	Filed with this report.
Exhibit 101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.	Filed with this report.
Exhibit 101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.	Filed with this report.
Exhibit 101.LAB	XBRL Taxonomy Extension Label Linkbase Document.	Filed with this report.
Exhibit 101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.	Filed with this report.