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

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the quarterly period ended March 31, 2020
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

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

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Common Stock, par value $0.01 per share	B	New York Stock Exchange

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

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

Indicate by check mark 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	☒	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 ☒

The registrant had outstanding 50,442,459 shares of common stock as of April 22, 2020.

Barnes Group Inc.
Index to Form 10-Q
For the Quarterly Period Ended March 31, 2020

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 March 31,	
	2020	**2019**
Net sales	$ 330,671	$ 376,692
Cost of sales	208,248	244,643
Selling and administrative expenses	73,110	81,400
	281,358	326,043
Operating income	49,313	50,649
Interest expense	4,324	5,113
Other expense (income), net	1,594	1,806
Income before income taxes	43,395	43,730
Income taxes	13,662	9,738
Net income	$ 29,733	$ 33,992
Per common share:		
Basic	$ 0.58	$ 0.66
Diluted	0.58	0.65
Weighted average common shares outstanding:		
Basic	51,061,132	51,660,804
Diluted	51,501,857	52,189,465

See accompanying notes.

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

	Three Months Ended March 31,	
	2020	**2019**
Net income	$ 29,733	$ 33,992
Other comprehensive (loss) income, net of tax		
Unrealized loss on hedging activities, net of tax (1)	(2,337)	(568)
Foreign currency translation adjustments, net of tax (2)	(36,333)	(9,225)
Defined benefit pension and other postretirement benefits, net of tax (3)	4,481	1,615
Total other comprehensive loss, net of tax	(34,189)	(8,178)
Total comprehensive (loss) income	$ (4,456)	$ 25,814

(1) Net of tax of $(823) and $(175) for the three months ended March 31, 2020 and 2019, respectively.

(2) Net of tax of $(66) and $(100) for the three months ended March 31, 2020 and 2019, respectively.

(3) Net of tax of $810 and $540 for the three months ended March 31, 2020 and 2019, respectively.

See accompanying notes.

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

	March 31, 2020	December 31, 2019
Assets		
Current assets		
Cash and cash equivalents	$ 112,827	$ 93,805
Accounts receivable, less allowances (2020 - $5,899; 2019 - $5,197)	335,409	348,974
Inventories	240,951	232,706
Prepaid expenses and other current assets	67,404	67,532
Assets held for sale	—	21,373
Total current assets	756,591	764,390
Deferred income taxes	18,474	21,235
Property, plant and equipment	834,313	840,640
Less accumulated depreciation	(485,390)	(484,037)
	348,923	356,603
Goodwill	920,202	933,022
Other intangible assets, net	563,692	581,116
Other assets	59,723	53,924
Assets held for sale	—	28,045
Total assets	$ 2,667,605	$ 2,738,335
Liabilities and Stockholders' Equity		
Current liabilities		
Notes and overdrafts payable	$ 28,314	$ 7,724
Accounts payable	116,065	118,509
Accrued liabilities	205,264	209,992
Long-term debt - current	1,926	2,034
Liabilities held for sale	—	4,616
Total current liabilities	351,569	342,875
Long-term debt	783,424	825,017
Accrued retirement benefits	90,689	93,358
Deferred income taxes	85,313	88,408
Long-term tax liability	66,012	66,012
Other liabilities	45,638	45,148
Liabilities held for sale	—	6,989
Commitments and contingencies (Note 16)		
Stockholders' equity		
Common stock - par value $0.01 per share Authorized: 150,000,000 shares Issued: at par value (2020 - 63,889,861 shares; 2019 - 63,872,756 shares)	639	639
Additional paid-in capital	492,025	489,282
Treasury stock, at cost (2020 - 13,448,609 shares; 2019 - 13,051,256 shares)	(513,708)	(498,074)
Retained earnings	1,510,688	1,489,176
Accumulated other non-owner changes to equity	(244,684)	(210,495)
Total stockholders' equity	1,244,960	1,270,528
Total liabilities and stockholders' equity	$ 2,667,605	$ 2,738,335

See accompanying notes.

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

	Three Months Ended March 31,	
	2020	**2019**
Operating activities:		
Net income	$ 29,733	$ 33,992
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	23,617	25,100
(Gain) loss on disposition of property, plant and equipment	(123)	91
Stock compensation expense	2,552	3,021
Seeger divestiture charges	6,620	—
Changes in assets and liabilities, net of the effects of divestitures:		
Accounts receivable	9,592	4,345
Inventories	(12,788)	7,300
Prepaid expenses and other current assets	(3,227)	(2,670)
Accounts payable	1,328	(9,179)
Accrued liabilities	(7,885)	(4,708)
Deferred income taxes	462	(872)
Long-term retirement benefits	(3,518)	(3,428)
Other	821	68
Net cash provided by operating activities	47,184	53,060
Investing activities:		
Proceeds from disposition of property, plant and equipment	185	322
Proceeds from the sale of businesses, net of cash sold	36,879	—
Investment in restricted cash	(6,621)	—
Capital expenditures	(11,912)	(13,738)
Net cash provided (used) in investing activities	18,531	(13,416)
Financing activities:		
Net change in other borrowings	20,775	20,903
Payments on long-term debt	(83,521)	(152,195)
Proceeds from the issuance of long-term debt	50,000	102,990
Proceeds from the issuance of common stock	183	986
Common stock repurchases	(15,550)	—
Dividends paid	(8,133)	(8,217)
Withholding taxes paid on stock issuances	(84)	(80)
Other	(7,252)	(1,340)
Net cash used in financing activities	(43,582)	(36,953)
Effect of exchange rate changes on cash flows	(3,111)	97
Increase in cash and cash equivalents	19,022	2,788
Cash and cash equivalents at beginning of period	93,805	100,719
Cash and cash equivalents at end of period	$ 112,827	$ 103,507

See accompanying notes.

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. Basis of Presentation

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, 2019 has been derived from the 2019 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, 2019. 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 three-month period ended March 31, 2020 are not necessarily indicative of the results that may be expected for the year ending December 31, 2020.

2. Divestiture

On December 20, 2019, the Company entered into a Share Purchase and Transfer Agreement ("SPA") with the Kajo Neukirchen Group ("KNG") to sell the Seeger business, consisting of partnership interests and shares, respectively, of Seeger-Orbis GmbH & Co. OHG and Seeger-Orbis Mechanical Components (Tianjin) Co., Ltd. ("Seeger") for 42,500 Euros, subject to certain adjustments. The Company classified the assets and liabilities of Seeger, which operated within the Industrial segment, as "held for sale" on the Consolidated Balance Sheet as of December 31, 2019. Pursuant to the required accounting guidance, the Company allocated $15,000 of goodwill from the Engineered Components reporting unit to Seeger based on the estimated relative fair values of the business to be disposed of and the portion of the reporting unit that will be retained. The Company subsequently recorded an impairment charge of $5,600 related to the goodwill that was allocated to Seeger. The impairment charge was recorded within Selling and Administrative expenses on the Consolidated Statements of Income in the period ended December 31, 2019.

The Seeger assets and liabilities held for sale were comprised of the following as of December 31, 2019:

Assets		
Accounts receivable, less allowance of $152	**$**	**6,844**
Inventories		**13,727**
Prepaid expenses and other current assets		**802**
Current assets held for sale		**21,373**
Property, plant and equipment, net		**17,701**
Other intangible assets, net		**590**
Goodwill		**9,400**
Other assets		**354**
Non-current assets held for sale		**28,045**
Liabilities		
Accounts payable	**$**	**2,961**
Accrued liabilities		**1,655**
Current liabilities held for sale		**4,616**
Accrued retirement benefits		**5,788**
Other liabilities		**1,201**
Non-current liabilities held for sale		**6,989**

The Company completed the sale of the Seeger business to KNG effective February 1, 2020. Gross proceeds received were 39,634 Euros ($43,732). The Company yielded net cash proceeds of $36,879 after consideration of cash sold and transaction

costs. The final amount of proceeds from the sale is subject to post-closing adjustments. Resulting tax charges of $4,211 were recognized in the first quarter of 2020 following the completion of the sale. Divestiture charges of $2,409 resulted from the completion of the sale and were recorded within Selling and Administrative expenses on the Consolidated Statements of Income in the quarter ended March 31, 2020.

The Company utilized the proceeds from the sale to reduce debt under the Amended Credit Facility. Pursuant to the SPA, 6,000 Euros ($6,626) of the proceeds were placed in escrow and will be released pro-ratably through 2024, pending any potential settlement of claims. Cash related to a pending claim would remain in escrow until a final determination of the claim has been made. The Company has recorded the $6,626 of restricted cash in other assets as of March 31, 2020.

3. Recent Accounting Standards

The Financial Accounting Standards Board ("FASB") establishes changes to accounting principles under U.S. GAAP through the use of Accounting Standards Updates ("ASUs") to the FASB's Accounting Standards Codification. The Company evaluates the applicability and potential impacts of recent ASUs on its Consolidated Financial Statements and related disclosures.

Recently Adopted Accounting Standards

In February 2016, the FASB amended its guidance related to lease accounting. The amended guidance required lessees to recognize a majority of their leases on the balance sheet as a right-of-use ("ROU") asset and a lease liability. The guidance was effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Early adoption was permitted. The Company adopted the new standard using the modified retrospective approach on January 1, 2019. The most significant impact of the guidance was the recognition of ROU assets and related lease liabilities for operating leases on the Consolidated Balance Sheet. The Company recognized ROU assets and related lease liabilities of $31,724 and $32,579 respectively, related to operating lease commitments, as of January 1, 2019. The amended guidance did not have a material impact on the Company's cash flows or results of operations.

In June 2016, the FASB amended its guidance related to credit losses on financial instruments. The amended guidance requires the use of a methodology of estimation that reflects expected credit losses on certain types of financial instruments, including trade receivables, as a replacement to the current methodology, which estimates losses based on incurred credit losses. This expected credit loss methodology requires that the Company consider a broader range of information when estimating credit losses on receivables. The amended guidance was effective for fiscal years, and interim periods within those years, beginning after December 15, 2019. The Company adopted this amended guidance and applicable FASB updates related to the guidance during the first quarter of 2020 and it did not have a material impact on the Company's Consolidated Financial Statements.

In January 2017, the FASB amended its guidance related to goodwill impairment testing. The amended guidance simplified 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 was effective for fiscal years beginning after December 15, 2019. Early adoption was permitted. The Company elected to early adopt this amended guidance during the second quarter of 2018 in connection with its annual goodwill impairment testing and it did not have an impact on the Company's Consolidated Financial Statements.

In August 2017, the FASB amended its guidance related to hedge accounting. The amended guidance made more financial and nonfinancial hedging strategies eligible for hedge accounting, amends presentation and disclosure requirements and changes the assessment of effectiveness. The guidance also more closely aligned hedge accounting with management strategies, simplifies application and increases the transparency of hedging. The amended guidance was effective January 1, 2019, with early adoption permitted in any interim period. The Company adopted the amended guidance on January 1, 2019 and it did not have a material impact on the Consolidated Financial Statements, however it did result in amendments to certain disclosures required pursuant to the earlier guidance. See Note 10 of the Consolidated Financial Statements.

In August 2018, the FASB issued new guidance related to a customer's accounting for implementation, set-up, and other upfront costs incurred in a cloud computing arrangement that is hosted by a vendor (for example, a service contract). Pursuant to the new guidance, customers apply the same criteria for capitalizing implementation costs in a hosting arrangement as they would for an arrangement that has a software license. The new guidance was effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption was permitted, including adoption in any interim period for which financial statements have not been issued. The FASB provided the option of applying the guidance retrospectively or prospectively to all implementation costs incurred after the date of adoption. The Company elected to early

adopt this guidance, prospectively, during the third quarter of 2018, and it did not have a material impact on the Consolidated Financial Statements.

Recently Issued Accounting Standards

In August 2018, the FASB amended its guidance related to disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. The amended requirements serve to remove, add and otherwise clarify certain existing disclosures. The amended guidance is effective for fiscal years ending after December 15, 2020. The guidance requires application on a retrospective basis to all periods presented. The adoption of this amended guidance is not expected to have a material impact on the Company's Consolidated Financial Statements.

In December 2019, the FASB amended its guidance related to income taxes. The amended guidance simplifies the accounting for income taxes, eliminating certain exceptions to the general income tax principles, in an effort to reduce the cost and complexity of application. The amended guidance is effective for annual periods beginning after December 15, 2020, and interim periods within those reporting periods. Early adoption is permitted in any interim or annual period. The guidance requires application on either a prospective, retrospective or modified retrospective basis, contingent on the income tax exception being applied. The adoption of this amended guidance is not expected to have a material impact on the Company's Consolidated Financial Statements.

4. Revenue

The Company is a global provider of highly engineered products, differentiated industrial technologies, and innovative solutions, serving a wide range of end markets and customers. Its specialized products and services are used in far-reaching applications including aerospace, transportation, manufacturing, automation, healthcare, and packaging.

Revenue is recognized by the Company when control of the product or solution is transferred to the customer. Control is generally transferred when products are shipped or delivered to customers, title is transferred, and the significant risks and rewards of ownership have transferred, and the Company has rights to payment and rewards of ownership pass to the customer. Customer acceptance may also be a factor in determining whether control of the product has transferred. Although revenue is generally transferred at a point in time, a certain portion of businesses with customized products or contracts in which the Company performs work on customer-owned assets requires the use of an over time recognition model as certain contracts meet one or more of the established criteria pursuant to the accounting guidance. Also, service revenue is recognized as control transfers, which is concurrent with the services being performed.

The following table presents the Company's revenue disaggregated by products and services, and geographic regions, by segment:

	Three Months Ended March 31, 2020		
	Industrial	Aerospace	Total Company
Product and Services			
Engineered Components Products	$ 47,707	$ —	$ 47,707
Molding Solutions Products	97,406	—	97,406
Force & Motion Control Products	39,791	—	39,791
Automation Products	14,196	—	14,196
Aerospace Original Equipment Manufacturer Products	—	81,706	81,706
Aerospace Aftermarket Product and Services	—	49,865	49,865
	$ 199,100	$ 131,571	$ 330,671
Geographic Regions (A)			
Americas	$ 80,644	$ 92,578	$ 173,222
Europe	81,864	25,163	107,027
Asia	35,493	11,696	47,189
Rest of World	1,099	2,134	3,233
	$ 199,100	$ 131,571	$ 330,671

	Three Months Ended March 31, 2019		
	Industrial	Aerospace	Total Company
Product and Services			
Engineered Components Products	$ 69,684	$ —	$ 69,684
Molding Solutions Products	106,793	—	106,793
Force & Motion Control Products	51,617	—	51,617
Automation Products	14,408	—	14,408
Aerospace Original Equipment Manufacturer Products	—	87,939	87,939
Aerospace Aftermarket Product and Services	—	46,251	46,251
	$ 242,502	$ 134,190	$ 376,692
Geographic Regions (A)			
Americas	$ 98,288	$ 96,144	$ 194,432
Europe	94,430	24,324	118,754
Asia	48,942	12,404	61,346
Rest of World	842	1,318	2,160
	$ 242,502	$ 134,190	$ 376,692

(A) Sales by geographic region are based on the location to which the product is shipped.

Revenue from goods and services transferred to customers at a point in time accounted for approximately 85 percent and approximately 90 percent of revenue for the three month period ended March 31, 2020 and 2019, respectively. A majority of revenue within the Industrial segment and Aerospace OEM business, along with a portion of revenue within the Aerospace Aftermarket business, is recognized at a point in time, primarily when the product or solution is shipped to the customer.

Revenue from products and services transferred to customers over time accounted for approximately 15 percent and approximately 10 percent of revenue for the three month period ended March 31, 2020 and 2019, respectively. The Company recognizes revenue over time in instances where a contract supports a continual transfer of control to the customer.

Substantially all of our revenue in the Aerospace maintenance repair and overhaul business and a portion of the Engineered Components Products, Molding Solutions Products and Aerospace Original Equipment Manufacturer Products is recognized over time. Within the Molding Solutions and Aerospace Aftermarket businesses, this continual transfer of control to the customer results from repair and refurbishment work performed on customer controlled assets. With other contracts, this continual transfer of control to the customer is supported by clauses in the contract where we deliver products that do not have an alternative use and requires an enforceable right to payment of costs incurred (plus a reasonable profit) or the Company has a contractual right to complete any work in process and receive full contract price.

The majority of our revenues are from contracts that are less than one year, however certain Aerospace OEM and Industrial Molding Solutions business contracts extend beyond one year. In the Industrial segment, customers are typically OEMs or suppliers to OEMs and, in some businesses, distributors. In the Aerospace segment, customers include commercial airlines, OEMs and other aircraft and military parts and service providers.

A performance obligation represents a promise within a contract to provide a distinct good or service to the customer. Revenue is recognized in an over time model based on the extent of progress towards completion of the performance obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the products or services to be provided. The Company utilizes the cost-to-cost measure of progress for over time contracts as we believe this measure best depicts the transfer of control to the customer, which occurs as we incur costs on contracts.

Adjustments to net sales, cost of sales and the related impact to operating income are recognized as necessary in the period they become known. Revenue recognized from performance obligations satisfied in previous periods was not material in both the three months ended March 31, 2020 and 2019.

Contract Balances. The timing of revenue recognition, invoicing and cash collections affect accounts receivable, unbilled receivables (contract assets) and customer advances and deposits (contract liabilities) on the Consolidated Balance Sheets.

Unbilled Receivables (Contract Assets) - Pursuant to the over time revenue recognition model, revenue may be recognized prior to the customer being invoiced. An unbilled receivable is recorded to reflect revenue that is recognized when 1) the cost-to-cost method is applied and 2) such revenue exceeds the amount invoiced to the customer. Unbilled receivables are included within prepaid expenses and other current assets on the Consolidated Balance Sheets as of March 31, 2020 and December 31, 2019.

Customer Advances and Deposits (Contract Liabilities) - The Company may receive a customer advance or deposit, or have an unconditional right to receive a customer advance, prior to revenue being recognized. Certain contracts within the Molding Solutions business, for example, may require such advances. Since the performance obligations related to such advances may not have been satisfied, a contract liability is established. An offsetting asset of equal amount is recorded as an account receivable until the advance is collected. Advances and deposits are included within accrued liabilities on the Consolidated Balance Sheets until the respective revenue is recognized. Advance payments are not considered a significant financing component as they are generally received less than one year before the customer solution is completed. These assets and liabilities are reported on the Consolidated Balance Sheets on an individual contract basis at the end of each reporting period.

Net contract liabilities consisted of the following:

	March 31, 2020	December 31, 2019	$ Change	% Change
Unbilled receivables (contract assets)	$ 26,301	$ 22,444	$ 3,857	17 %
Contract liabilities	(51,086)	(55,076)	3,990	(7)%
Net contract liabilities	$ (24,785)	$ (32,632)	$ 7,847	(24)%

Contract liabilities balances at March 31, 2020 and December 31, 2019 include $14,064 and $16,971, respectively, of customer advances for which the Company has an unconditional right to collect payment. Accounts receivable, as presented on the Consolidated Balance Sheet, includes corresponding balances at March 31, 2020 and December 31, 2019, respectively.

Changes in the net contract liabilities balance during the three-month period ended March 31, 2020 were impacted by a $3,990 decrease in contract liabilities, driven primarily by revenue recognized in the current period, partially offset by new customer advances and deposits. Adding to this net contract liability decrease was a $3,857 increase in contract assets, driven primarily by contract progress (i.e. unbilled receivable), partially offset by earlier contract progress being invoiced to the customer.

The Company recognized approximately 40% of the revenue related to the contract liability balance as of December 31, 2019 during the three months ended March 31, 2020, primarily representing revenue from the sale of molds and hot runners within the Molding Solutions business.

Remaining Performance Obligations. The Company has elected to disclose remaining performance obligations only for contracts with an original duration of greater than one year. Such remaining performance obligations represent the transaction price of firm orders for which work has not been performed and, for Aerospace, excludes projections of components and assemblies that Aerospace OEM customers anticipate purchasing in the future under existing programs, which represent orders that are beyond lead time and do not represent performance obligations pursuant to accounting guidance. As of March 31, 2020, the aggregate amount of the transaction price allocated to remaining performance obligations was $207,343. The Company expects to recognize revenue on approximately 75% of the remaining performance obligations over the next 12 months, with the remainder being recognized within 24 months.

5. Stockholders' Equity

A schedule of consolidated changes in equity for the three months ended March 31, 2020 is as follows (shares in thousands):

	Common Stock (Number of Shares)	Common Stock (Amount)	Additional Paid-In Capital	Treasury Stock (Number of Shares)	Treasury Stock (Amount)	Retained Earnings	Accumulated Other Non-Owner Changes to Equity	Total Stockholders' Equity
December 31, 2019	63,873	$ 639	$ 489,282	13,051	$ (498,074)	$ 1,489,176	$ (210,495)	$ 1,270,528
Comprehensive income	—	—	—	—	—	29,733	(34,189)	(4,456)
Dividends declared ($0.16 per share)	—	—	—	—	—	(8,133)	—	(8,133)
Common stock repurchases	—	—	—	396	(15,550)	—	—	(15,550)
Employee stock plans	17	—	2,743	2	(84)	(88)	—	2,571
March 31, 2020	63,890	$ 639	$ 492,025	13,449	$ (513,708)	$ 1,510,688	$ (244,684)	$ 1,244,960

A schedule of consolidated changes in equity for the three months ended March 31, 2019 is as follows (shares in thousands):

	Common Stock (Number of Shares)	Common Stock (Amount)	Additional Paid-In Capital	Treasury Stock (Number of Shares)	Treasury Stock (Amount)	Retained Earnings	Accumulated Other Non-Owner Changes to Equity	Total Stockholders' Equity
December 31, 2018	63,367	$ 634	$ 470,818	12,034	$ (441,668)	$ 1,363,772	$ (190,500)	$ 1,203,056
Comprehensive income	—	—	—	—	—	33,992	(8,178)	25,814
Dividends declared ($0.16 per share)	—	—	—	—	—	(8,217)	—	(8,217)
Employee stock plans	51	—	4,039	1	(80)	(109)	—	3,850
March 31, 2019	63,418	$ 634	$ 474,857	12,035	$ (441,748)	$ 1,389,438	$ (198,678)	$ 1,224,503

6. 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 440,725 and 528,661 for the three month periods ended March 31, 2020 and 2019, 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 March 31, 2020 and 2019, the Company excluded 325,670 and 221,201 stock awards, respectively, from the calculation of weighted-average diluted shares outstanding as the stock awards were considered anti-dilutive.

The Company granted 102,500 stock options, 79,994 restricted stock unit awards and 81,283 performance share awards ("PSAs") in February 2020 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 PSAs are part of the long-term Performance Share Award 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 2020 include the Company's total shareholder return ("TSR"), return on invested capital ("ROIC") and operating income before depreciation and amortization growth ("EBITDA growth"). The TSR and EBITDA growth metrics are 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. ROIC is designed to assess the Company's performance compared to pre-established Company targets over a three -year performance 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 was determined using a Monte Carlo valuation method as the award contains a market condition.

7. Inventories

The components of inventories consisted of:

	March 31, 2020	December 31, 2019
Finished goods	$ 71,244	$ 69,594
Work-in-process	92,624	88,196
Raw material and supplies	77,083	74,916
	$ 240,951	$ 232,706

8. 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 March 31, 2020:

	Industrial	Aerospace	Total Company
January 1, 2020	$ 902,236	$ 30,786	$ 933,022
Foreign currency translation	(12,820)	—	(12,820)
March 31, 2020	$ 889,416	$ 30,786	$ 920,202

Other Intangible Assets:
Other intangible assets consisted of:

		March 31, 2020		December 31, 2019	
	Range of Life -Years	Gross Amount	Accumulated Amortization	Gross Amount	Accumulated Amortization
Amortized intangible assets:					
Revenue Sharing Programs (RSPs)	Up to 30	$ 299,500	$ (138,889)	$ 299,500	$ (135,466)
Component Repair Programs (CRPs)	Up to 30	111,839	(28,585)	111,839	(27,270)
Customer relationships	10-16	338,366	(103,779)	338,366	(98,953)
Patents and technology	4-11	123,433	(70,419)	123,433	(68,188)
Trademarks/trade names	10-30	10,949	(10,216)	10,949	(10,145)
Other	Up to 15	10,746	(4,191)	10,746	(4,014)
		894,833	(356,079)	894,833	(344,036)
Unamortized intangible assets:					
Trade names		55,670	—	55,670	—
Foreign currency translation		(30,732)	—	(25,351)	—
Other intangible assets		$ 919,771	$ (356,079)	$ 925,152	$ (344,036)

Estimated amortization of intangible assets for future periods is as follows: 2020 - $46,000; 2021 - $50,000; 2022- $49,000; 2023 - $48,000 and 2024 - $46,000.

9. Debt

Long-term debt and notes and overdrafts payable at March 31, 2020 and December 31, 2019 consisted of:

	March 31, 2020		December 31, 2019	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Revolving credit agreement	$ 679,079	$ 673,294	$ 720,379	$ 737,816
3.97% Senior Notes	100,000	110,993	100,000	104,151
Borrowings under lines of credit and overdrafts	28,314	28,314	7,724	7,724
Finance leases	5,915	6,028	6,266	6,515
Other foreign bank borrowings	356	358	406	410
	813,664	818,987	834,775	856,616
Less current maturities	(30,240)		(9,758)	
Long-term debt	$ 783,424		$ 825,017	

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 increased 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 previous
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, British pound sterling or Swiss franc borrowing, up to $600,000.
In September 2018, the Company and one of its wholly owned subsidiaries entered into a Sale and Purchase Agreement to acquire Gimatic. In conjunction with the Acquisition, the Company requested additional borrowings of $150,000 that was provided for under the existing accordion feature. The Administrative Agent for the lenders approved the Company's access to the accordion feature and on October 19, 2018 the lenders formally committed the capital to fund such feature, resulting in the execution of the fifth amendment to the Amended Credit Agreement (the "Fifth Amendment"). The Fifth Amendment, effective October 19, 2018, thereby increased the borrowing availability of the existing facility to $1,000,000. The Company may also request access to the residual $200,000 of the accordion feature. 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%. Multi-currency borrowings, pursuant to the Amended Credit Agreement, bear interest at their respective interbank offered rate (i.e. Euribor) or 0.00% (higher of the two rates) plus a margin of between 1.10% and 1.70%.

Borrowings and availability under the Amended Credit Agreement were $679,079 and $320,921, respectively, at March 31, 2020 and $720,379 and $279,621, respectively, at December 31, 2019, subject to covenants in the Company's revolving debt agreements. The borrowing capacity under the Amended Credit Agreement was limited by the Senior Debt Ratio (defined below) to $294,190 as of March 31, 2020. The average interest rate on these borrowings was 1.44% and 1.76% on March 31, 2020 and December 31, 2019, respectively. Borrowings included Euro-denominated borrowings of 456,490 Euros ($504,079) at March 31, 2020 and 504,690 Euros ($565,379) at December 31, 2019. 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 2019, the Company borrowed 44,100 Euros ($49,506) under the Amended Credit Facility through an international subsidiary. The proceeds were distributed to the Parent Company and subsequently used to pay down U.S. borrowings under the Amended Credit Agreement.

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 U.S. Treasury yield and a long-term credit spread for similar types of borrowings, which 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 ("Total Debt Ratio") 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. A permitted acquisition is defined as an acquisition exceeding $150,000, for which the acquisition of Gimatic on October 31, 2018 qualified. With the completion of a permitted acquisition, the Senior Debt Ratio cannot exceed 3.50 times and the Total Debt Ratio cannot exceed 4.25 times. The increased ratios were allowed for a period of four fiscal quarters subsequent to the close of the permitted acquisition and therefore expired in the fourth quarter of 2019. At March 31, 2020, the Company was in compliance with all covenants under the Agreements and continues to monitor its future compliance based on current and future economic conditions.

In addition, the Company has available approximately $81,000 in uncommitted short-term bank credit lines ("Credit Lines") and overdraft facilities. The Credit Lines are accessed locally and are available primarily within the U.S., Europe and Asia. The Credit Lines are subject to the applicable borrowing rates within each respective country and vary between jurisdictions (i.e. LIBOR, Euribor, etc.). Under the Credit Lines, $27,900 was borrowed at March 31, 2020 at an average interest rate of 1.05% and $7,700 was borrowed at December 31, 2019 at an average interest rate of 2.38%. The Company had also borrowed $414 and $24 under the overdraft facilities at March 31, 2020 and December 31, 2019, 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 also has several finance leases under which $5,915 and $6,266 was outstanding at March 31, 2020 and December 31, 2019, respectively. The fair value of the finance leases are based on observable Level 2 inputs. These instruments were valued using discounted cash flows based upon the Company's estimated interest costs for similar types of borrowings.

At March 31, 2020 and December 31, 2019, the Company also had other foreign bank borrowings of $356 and $406, respectively. The fair value of the other foreign bank borrowings was based on observable Level 2 inputs. These instruments were valued using discounted cash flows based upon the Company's estimated interest costs for similar types of borrowings.

10. 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. The Company entered into an interest rate swap agreement (the "Swap") on April 28, 2017, with one bank, which 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 and is accounted for as a cash flow hedge.

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, Mexican peso, Hong Kong dollar 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 cash flow hedges are recorded to accumulated other non-owner changes to equity. 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. 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 three months of 2020 and 2019, as presented on the Consolidated Statements of Cash Flows, include $7,212 and $1,299, respectively, of net cash payments related to 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:

	Derivative Assets			Derivative Liabilities		
		Fair Value			Fair Value	
	Balance Sheet Location	March 31, 2020	December 31, 2019	Balance Sheet Location	March 31, 2020	December 31, 2019
Derivatives designated as hedging instruments:						
Interest rate contracts	Other assets	$ —	$ —	Other liabilities	$ (3,042)	$ (820)
Foreign exchange contracts	Prepaid expenses and other current assets	—	700	Accrued liabilities	(635)	—
Total derivatives designated as hedging instruments		—	700		(3,677)	(820)
Derivatives not designated as hedging instruments:						
Foreign exchange contracts	Prepaid expenses and other current assets	6	1,375	Accrued liabilities	(846)	(1)
Total derivatives not designated as hedging instruments		6	1,375		(846)	(1)
Total derivatives		$ 6	$ 2,075		$ (4,523)	$ (821)

The following table sets forth the effect of hedge accounting on accumulated other comprehensive (loss) income for the three month periods ended March 31, 2020 and 2019:

	Amount of Gain (Loss) Recognized in Accumulated Other Comprehensive Income (Loss) on Derivative			Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income		
	Three Months Ended March 31,				Three Months Ended March 31,	
Derivatives in Hedging Relationships	2020	2019		Location of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income (Loss) into Income	2020	2019
Derivatives in Cash Flow Hedging Relationships:						
Interest rate contracts	$ (1,694)	$ (487)		Interest expense	$ (61)	$ 142
Foreign exchange contracts	(643)	(81)		Net sales	(523)	(337)
Total	$ (2,337)	$ (568)			$ (584)	$ (195)

The following table sets forth the effect of hedge accounting on the consolidated statements of income for the three-month periods ended March 31, 2020 and 2019:

	Location and Amount of Gain (Loss) Recognized in Income on Hedging Relationships			
	Three Months Ended March 31,			
	2020		2019	
	Net sales	Interest expense	Net sales	Interest expense
Total amounts of income and expense line items presented in the consolidated statements of income in which the effects of hedges are recorded	$ 330,671	$ 4,324	$ 376,692	$ 5,113
The effects of hedging:				
Gain (Loss) on cash flow hedging relationships				
Interest rate contracts				
Amount of gain (loss) reclassified from accumulated other comprehensive income (loss) into income		(61)		142
Foreign exchange contracts				
Amount of gain (loss) reclassified from accumulated other comprehensive income (loss) into income	(523)		(337)	

The following table sets forth the effect of derivatives not designated as hedging instruments on the consolidated statements of income for the three-month periods ended March 31, 2020 and 2019:

Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in Income on Derivative	Amount of Gain (Loss) Recognized in Income on Derivative[(A)]	
		Three Months Ended March 31,	
		2020	2019
Foreign exchange contracts	Other expense (income), net	$ (12,195)	$ (3,819)

(A) 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.

11. 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 assets and liabilities reported at fair value and measured on a recurring basis:

Description	Total	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
March 31, 2020				
Asset derivatives	$ 6	$ —	$ 6	$ —
Liability derivatives	(4,523)	—	(4,523)	—
Bank acceptances	12,911	—	12,911	—
Rabbi trust assets	2,507	2,507	—	—
Total	$ 10,901	$ 2,507	$ 8,394	$ —
December 31, 2019				
Asset derivatives	$ 2,075	$ —	$ 2,075	$ —
Liability derivatives	(821)	—	(821)	—
Bank acceptances	14,460	—	14,460	—
Rabbi trust assets	2,947	2,947	—	—
Total	$ 18,661	$ 2,947	$ 15,714	$ —

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 China-based 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.

12. Pension and Other Postretirement Benefits

Pension and other postretirement benefits expenses consisted of the following:

Pensions	Three Months Ended March 31,	
	2020	2019
Service cost	$ 1,649	$ 1,433
Interest cost	3,817	4,536
Expected return on plan assets	(7,393)	(7,078)
Amortization of prior service cost	80	103
Amortization of actuarial losses	3,339	2,158
Net periodic benefit cost	$ 1,492	$ 1,152

Other Postretirement Benefits	Three Months Ended March 31,	
	2020	2019
Service cost	$ 22	$ 19
Interest cost	264	340
Amortization of prior service cost	7	6
Amortization of actuarial losses	23	10
Net periodic benefit cost	$ 316	$ 375

The service cost component of net periodic benefit cost is included within cost of sales and selling and administrative expenses. The components of net periodic benefit cost other than the service cost component are included in Other Income (Expense) on the Consolidated Statements of Income.

13. Income Taxes

The Company's effective tax rate for the first quarter of 2020 was 31.5% compared with 22.3% in the first quarter of 2019 and 23.4% for the full year 2019. The increase in the first quarter of 2020 effective tax rate from the full year 2019 rate is primarily due to the recognition of tax expense related to the completed sale of the Seeger business during the first quarter of 2020 ($4,211), partially offset by a benefit related to a refund of withholding taxes that were previously paid and

included in tax expense in prior years and a reduction of the statutory tax rate at one of our international operations.

The Aerospace and Industrial Segments have a number of multi-year tax holidays in Singapore and China. These holidays are subject to the Company meeting certain commitments in the respective jurisdictions. Aerospace was granted an income tax holiday for operations recently established in Malaysia. The Company anticipates the holiday beginning during the second half of 2020. The holiday will remain effective for ten years.

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

The following tables set forth the changes in accumulated other comprehensive income (loss), net of tax, by component for the three month periods ended March 31, 2020 and 2019:

	Gains and Losses on Cash Flow Hedges	Pension and Other Postretirement Benefit Items	Foreign Currency Items	Total
January 1, 2020	$ (115)	$ (144,047)	$ (66,333)	$ (210,495)
Other comprehensive income (loss) before reclassifications	(2,879)	1,842	(36,333)	(37,370)
Amounts reclassified from accumulated other comprehensive income to the consolidated statements of income	542	2,639	—	3,181
Net current-period other comprehensive income (loss)	(2,337)	4,481	(36,333)	(34,189)
March 31, 2020	$ (2,452)	$ (139,566)	$ (102,666)	$ (244,684)

	Gains and Losses on Cash Flow Hedges	Pension and Other Postretirement Benefit Items	Foreign Currency Items	Total
January 1, 2019	$ 834	$ (138,690)	$ (52,644)	$ (190,500)
Other comprehensive income (loss) before reclassifications	(723)	(122)	(9,225)	(10,070)
Amounts reclassified from accumulated other comprehensive income to the consolidated statements of income	155	1,737	—	1,892
Net current-period other comprehensive income (loss)	(568)	1,615	(9,225)	(8,178)
March 31, 2019	$ 266	$ (137,075)	$ (61,869)	$ (198,678)

The following tables set forth the reclassifications out of accumulated other comprehensive income (loss) by component for the three month periods ended March 31, 2020 and 2019:

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 March 31, 2020	Three Months Ended March 31, 2019	
Gains and losses on cash flow hedges			
Interest rate contracts	$ (61)	$ 142	Interest expense
Foreign exchange contracts	(523)	(337)	Net sales
	(584)	(195)	Total before tax
	42	40	Tax benefit
	(542)	(155)	Net of tax
Pension and other postretirement benefit items			
Amortization of prior-service costs	$ (87)	$ (109)	(A)
Amortization of actuarial losses	(3,362)	(2,168)	(A)
	(3,449)	(2,277)	Total before tax
	810	540	Tax benefit
	(2,639)	(1,737)	Net of tax
Total reclassifications in the period	$ (3,181)	$ (1,892)	

(A) These accumulated other comprehensive income (loss) components are included within the computation of net periodic Pension and Other Postretirement Benefits cost. See Note 12.

15. 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.

Industrial is a global provider 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, automation, personal care, packaging, electronics, and medical devices. 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 business designs and manufactures 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. The Force & Motion Control business provides innovative cost effective force and motion control solutions for a wide range of metal forming and other industrial markets. The Automation business designs and develops robotic grippers, advanced end-of-arm tooling systems, sensors and other automation components for intelligent robotic handling solutions and industrial automation applications. Industrial's Engineered Components business manufactures and supplies precision mechanical products used in transportation and industrial applications, including mechanical springs, and high-precision punched and fine-blanked components.

Aerospace is a global manufacturer of complex fabricated and precision machined components and assemblies for turbine engines, nacelles and structures for both commercial and military aircraft. The Aerospace aftermarket business provides aircraft engine component MRO services, including services performed under our Component Repair Programs (“CRPs”), for many of the world’s major turbine engine manufacturers, commercial airlines and the military. The Aerospace aftermarket activities also include the manufacture and delivery of aerospace aftermarket spare parts, including Revenue Sharing Programs (“RSPs”) under which the Company receives an exclusive right to supply designated aftermarket parts over the life of specific aircraft engine programs.

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

	Three Months Ended March 31,	
	2020	2019
Net sales		
Industrial	$ 199,100	$ 242,502
Aerospace	131,571	134,190
Intersegment sales	—	—
Total net sales	$ 330,671	$ 376,692
Operating profit		
Industrial	$ 17,924	$ 21,502
Aerospace	31,389	29,147
Total operating profit	49,313	50,649
Interest expense	4,324	5,113
Other expense (income), net	1,594	1,806
Income before income taxes	$ 43,395	$ 43,730

	March 31, 2020	December 31, 2019
Assets		
Industrial	$ 1,789,094	$ 1,879,258
Aerospace	706,104	704,318
Other [(A)]	172,407	154,759
Total assets	$ 2,667,605	$ 2,738,335

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

16. 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 March 31, 2020 and December 31, 2019.

Litigation

The Company is subject to litigation from time to time in the ordinary course of business and various other suits, proceedings and claims are pending involving the Company and its subsidiaries. The Company records a loss contingency liability when a loss is considered probable and the amount can be reasonably estimated. While it is not possible to determine the ultimate disposition of each of these proceedings and whether they will be resolved consistent with the Company's beliefs, the Company expects that the outcome of such proceedings, individually or in the aggregate, will not have a material adverse effect on financial condition or results of operations.

With respect to the unaudited consolidated financial information of Barnes Group Inc. for the three months period ended March 31, 2020 and 2019, 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 April 27, 2020 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.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Barnes Group Inc.

Results of Review of Interim Financial Information

We have reviewed the accompanying consolidated balance sheet of Barnes Group Inc. and its subsidiaries (the "Company") as of March 31, 2020, and the related consolidated statements of income, of comprehensive income, and of cash flows for the three-month periods ended March 31, 2020 and 2019, including the related notes (collectively referred to as the "interim financial information"). Based on our reviews, we are not aware of any material modifications that should be made to the accompanying interim financial information for it to be in conformity with accounting principles generally accepted in the United States of America.

We have previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of the Company as of December 31, 2019, 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 24, 2020, which included a paragraph describing a change in the manner of accounting for leases in the 2019 financial statements and revenue in the 2018 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, 2019, is fairly stated, in all material respects, in relation to the consolidated balance sheet from which it has been derived.

Basis for Review Results

This interim financial information is the responsibility of the Company's management. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB. We conducted our review in accordance with the standards of the PCAOB. 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 PCAOB, 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.

/s/ PricewaterhouseCoopers LLP

Hartford, Connecticut
April 27, 2020

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, 2019. The Annual Report on Form 10-K and other documents related to the Company are located on the Company's website: www.bginc.com.

First Quarter Highlights

The Company reported net sales of $330.7 million in the first quarter of 2020, a decrease of $46.0 million or 12.2%, from the first quarter of 2019. Organic sales decreased by $31.2 million, or 8.3%, including decreases of $28.6 at Industrial and $2.6 at Aerospace. The Company completed the sale of its Seeger business on February 1, 2020, reducing sales by $10.3 million during the first quarter of 2020 relative to the prior year period (see below). The strengthening of the U.S. dollar against foreign currencies decreased net sales within the Industrial segment by approximately $4.5 million. Operating margins, however, improved from 13.4% to 14.9% during the period, largely a result of favorable productivity, the absence of short-term purchase accounting adjustments related to the acquisition of Gimatic and a higher mix of sales volumes from the Aerospace segment.

The Company completed the sale of the Seeger business effective February 1, 2020. Gross proceeds received were 39.6 million Euros ($43.7 million). The Company yielded net cash proceeds of $36.9 million after consideration of cash sold and transaction costs. The final amount of proceeds from the sale is subject to post-closing adjustments. Resulting tax charges of $4.2 million were recognized in the first quarter of 2020, following the completion of the sale. See Note 2 within the Consolidated Financial Statements for further discussion.

Impact of Coronavirus

In December 2019, an outbreak of a novel strain of coronavirus (“COVID-19”) began in Wuhan, China, and was subsequently declared a pandemic by the World Health Organization. The outbreak and a continued spread of COVID-19 has resulted in a substantial curtailment of business activities worldwide and is causing weakened economic conditions, both in the United States and abroad. As part of growing efforts to contain the spread of COVID-19, a number of state, local and foreign governments have imposed various restrictions on the conduct of business and travel. The Company's global manufacturing operations of essential systems and components continues at reduced levels, with minimal plant closures. As a result of the COVID-19 pandemic and in support of continuing its manufacturing efforts, the Company has undertaken a number of steps to protect its employees, suppliers and customers. The Company’s global supply chain management team continues to monitor and manage its ability to operate effectively, however, to date, the Company has not experienced any significant disruptions within its supply chain. Ongoing communications with the Company's suppliers to identify and mitigate risk and to manage inventory levels will continue. Notwithstanding the Company's continued operations, COVID-19 has begun to have and may have further negative impacts on its operations, customers and supply chain even after the preventative and precautionary measures being taken.

The Company maintains sufficient liquidity and will continue to evaluate ways to enhance its liquidity position as it navigates through the disrupted business environment that has resulted from COVID-19. As of March 31, 2020, the Company held $112.8 million in cash and cash equivalents and had $320.9 million of undrawn borrowing capacity under its $1,000.0 million Amended Credit Facility, subject to covenants in the Company's revolving debt agreements. The Company remained in compliance with all covenants under its revolving Credit Agreement, which matures in February 2022, as of March 31, 2020. At this time, the Company has not drawn on its debt agreements as it believes the availability of those funds are not at risk given the strength of the underlying bank syndicate. The Company does not currently anticipate requiring any additional debt facilities, nor does it anticipate a material change in the terms or covenants pertaining to its current facilities. Given the current environment, the Company is closely monitoring its cash generation, usage and preservation including the management of working capital to generate cash. To better align costs with the current business environment, the Company has taken several actions which include temporary reductions in compensation for salaried employees including Company officers and Board directors, employee furloughs and reductions in discretionary expenses. As well, management has now suspended share repurchase activity. See additional discussion regarding liquidity within “Item 2 - Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources”.

Entering 2020, automotive, tool and die, and personal care and packaging end markets were experiencing lingering softness. Given the onset of the COVID-19 outbreak, sales pressure increased further within these markets. Medical end markets are expected to remain favorable. Aerospace end markets remained strong entering 2020, however the Company currently anticipates growing sales pressure within OEM as certain aircraft programs have been delayed as a result of COVID-19. Within

the aftermarket businesses, aircraft are being removed from service and utilization is reduced. See additional discussion regarding the anticipated financial impact of COVID-19 within “Item 2 - Management's Discussion and Analysis of Financial Condition and Results of Operations - Outlooks”.

RESULTS OF OPERATIONS

Net Sales

	Three Months Ended March 31,			
(in millions)	**2020**	**2019**	**Change**	
Industrial	$ 199.1	$ 242.5	$ (43.4)	(17.9)%
Aerospace	131.6	134.2	(2.6)	(2.0)%
Total	$ 330.7	$ 376.7	$ (46.0)	(12.2)%

The Company reported net sales of $330.7 million in the first quarter of 2020, a decrease of $46.0 million or 12.2%, from the first quarter of 2019. Organic sales decreased by $31.2 million, or 8.3%, including decreases of $28.6 at Industrial and $2.6 at Aerospace. The decrease at Industrial was driven by organic sales declines within several of the Industrial business units, due partially to continued softness in automotive end markets, reflecting global uncertainty, and potential changes in regulatory requirements related to personal care and packaging markets, partially offset by increased volumes within medical end markets. The Automation business experienced slight growth during the current period. Sales at Industrial during the first quarter of 2019 also included a $2.6 million commercial settlement attributed to a patent-related matter. The Company completed the sale of its Seeger business on February 1, 2020, reducing sales by $10.3 million during the first quarter of 2020 relative to the prior year period. The decrease at Aerospace was driven by a decline in sales within the original equipment manufacturing business ("OEM"), partially offset by sales growth within the aftermarket businesses. The decline in OEM sales was attributed to the 737 Max aircraft, following a suspension of production by Boeing. The strengthening of the U.S. dollar against foreign currencies decreased net sales within the Industrial segment by approximately $4.5 million.

The impacts of the COVID-19 outbreak also began to impact sales during the first quarter of 2020. Beginning late in the first quarter, Industrial and Aerospace business units began to experience the negative impact on demand for certain products and services due to COVID-19's disruption of global manufacturing and consumer spending. Much of the Company's global manufacturing of essential systems and components continues at reduced levels, however the current situation is very dynamic, and visibility of future operations is challenged. See additional discussion related to the anticipated financial impacts of COVID-19 within the segment outlooks below. See discussion related to COVID-19's risk on the Company's Consolidated Financial Statements within Part II, Item 1A.

Expenses and Operating Income

	Three Months Ended March 31,			
(in millions)	**2020**	**2019**	**Change**	
Cost of sales	$ 208.2	$ 244.6	$ (36.4)	(14.9)%
% sales	63.0%	64.9%		
Gross profit [1]	$ 122.4	$ 132.0	$ (9.6)	(7.3)%
% sales	37.0%	35.1%		
Selling and administrative expenses	$ 73.1	$ 81.4	$ (8.3)	(10.2)%
% sales	22.1%	21.6%		
Operating income	$ 49.3	$ 50.6	$ (1.3)	(2.6)%
% sales	14.9%	13.4%		

(1) Sales less cost of sales.

Cost of sales in the first quarter of 2020 decreased 14.9% from the 2019 period, while gross profit margin increased from 35.1% in the 2019 period to 37.0% in the 2020 period. Gross margins improved at both Industrial and Aerospace. At Industrial, gross profit decreased primarily as a result of the reduced profit impact of lower sales volumes. Gross margin at Industrial, however, increased during the 2020 period, driven primarily by the absence of $4.0 million of short-term purchase accounting

adjustments related to the acquisition of Gimatic and favorable productivity. Within Aerospace, increased volumes within the maintenance overhaul and repair and spare parts businesses, in particular, contributed to the increased gross profit and improvement in gross margin during the first quarter of 2020. Selling and administrative expenses in the first quarter of 2020 decreased 10.2% from the 2019 period due to the absence of costs related to workforce reductions during the 2019 period, lower amortization of certain intangibles related to earlier acquisitions and a reduction in employee related costs (including lower incentive compensation), partially offset by $2.4 million of divestiture charges related to the completion of the Seeger sale. As a percentage of sales, selling and administrative costs increased slightly from 21.6% in the first quarter of 2019 to 22.1% in the 2020 period. Operating income in the first quarter of 2020 decreased by 2.6% to $49.3 million compared with the first quarter of 2019, however operating income margin increased from 13.4% to 14.9%, primarily driven by the benefits to Cost of Sales at Industrial noted above and a higher mix of sales volumes from the Aerospace segment.

Interest expense
Interest expense decreased by $0.8 million in the first quarter of 2020 as compared with the prior year period, primarily a result of decreased average borrowings and lower average interest rates.

Other expense (income), net
Other expense (income), net in the first quarter of 2020 was $1.6 million compared to $1.8 million in the first quarter of 2019. Other expense (income) in the current period included a foreign currency gain of $0.3 million and the 2019 period included a foreign currency loss of $1.1 million.

Income Taxes
The Company's effective tax rate for the first quarter of 2020 was 31.5% compared with 22.3% in the first quarter of 2019 and 23.4% for the full year 2019. The increase in the first quarter of 2020 effective tax rate from the full year 2019 rate is primarily due to the recognition of tax expense related to the completed sale of the Seeger business during the first quarter of 2020 ($4.2 million), partially offset by a benefit related to a refund of withholding taxes that were previously paid and included in tax expense in prior years and a reduction of the statutory tax rate at one of our international operations.

The Aerospace and Industrial Segments have a number of multi-year tax holidays in Singapore and China. These holidays are subject to the Company meeting certain commitments in the respective jurisdictions. Aerospace was granted an income tax holiday for operations recently established in Malaysia. The Company anticipates the holiday beginning during the second half of 2020. The holiday will remain effective for ten years.

Income and Income per Share

	Three Months Ended March 31,			
(in millions, except per share)	**2020**	**2019**	**Change**	
Net income	$ 29.7	$ 34.0	$ (4.3)	(12.5)%
Net income per common share:				
Basic	$ 0.58	$ 0.66	$ (0.08)	(12.1)%
Diluted	0.58	0.65	(0.07)	(10.8)%
Weighted average common shares outstanding:				
Basic	51.1	51.7	(0.6)	(1.2)%
Diluted	51.5	52.2	(0.7)	(1.3)%

Basic and diluted net income per common share decreased for the three month period as compared to 2019. The decreases were due to the decrease in net income for the period and were partially offset by the impact of reductions in both basic and diluted weighted average common shares outstanding which decreased due to the repurchase of 900,000 and 396,000 shares during 2019 and 2020, respectively, as part of the Company's publicly announced Repurchase Program. The impact of the repurchased shares was partially offset by the issuance of additional shares for employee stock plans.

Financial Performance by Business Segment

Industrial

(in millions)	Three Months Ended March 31, 2020	2019	Change	
Sales	$ 199.1	$ 242.5	$ (43.4)	(17.9)%
Operating profit	17.9	21.5	(3.6)	(16.6)%
Operating margin	9.0%	8.9%		

Sales at Industrial were $199.1 million in the first quarter of 2020, a $43.4 million, or 17.9% decrease from the first quarter of 2019. Organic sales decreased by $28.6 million, or 11.8%, during the 2020 period, driven by declines in sales within each of the businesses, with the exception of Automation. Softness in automotive end markets continued to negatively impact sales volumes, largely due to lower global auto production rates and delays in automotive model change releases, reflecting ongoing global trade uncertainty. Sales within the personal care and packaging markets continued to be impacted by proposed environmental regulations affecting product and packaging composition and disposability. Increased volumes within the medical end market, however, partially offset the automotive, personal care and packaging related volume declines. Sales during the first quarter of 2019 also included a $2.6 million commercial settlement of a patent-related matter. The Company completed the sale of its Seeger business on February 1, 2020, reducing sales by $10.3 million during the first quarter of 2020 relative to the prior year period. Beginning in February 2020, Industrial began to experience further softness in China end markets resulting from the negative impacts of the COVID-19 pandemic, with softness expanding into European and North American markets in March 2020. See additional discussion below and within Part II, Item 1A. Foreign currency decreased sales by approximately $4.5 million as the U.S. dollar strengthened against foreign currencies.

Operating profit in the first quarter of 2020 at Industrial was $17.9 million, a decrease of $3.6 million from the first quarter of 2019. Operating profit was negatively impacted by the lower profit contribution of declining organic sales volumes across the businesses and $2.4 million of divestiture charges related to the completion of the Seeger sale. Favorable productivity, including the absence of costs related to workforce reductions during the 2019 period, lower amortization of certain intangibles related to earlier acquisitions and a reduction in employee related costs (including lower incentive compensation) partially offset the profit impact of lower volumes within Industrial. The first quarter of 2019 also included $4.0 million of short-term purchase accounting adjustments related to the acquisition of Gimatic and the operating profit benefit of the $2.6 million commercial settlement. Operating margin increased from 8.9% in the 2019 period to 9.0% in the 2020 period, primarily a result of the net benefits described above.

Outlook: In Industrial, management remains focused on generating organic sales growth through the introduction of new products and services and by leveraging the benefits of its diversified products and global industrial end-markets, however the onset of the COVID-19 pandemic has presented new challenges for the Company. Our ability to generate sales growth is subject to recent disruptions within the global markets served by all of our businesses. Entering 2020, automotive, tool and die, and personal care and packaging end markets were experiencing lingering softness. Given the onset of COVID-19, sales pressure increased further within these markets. Markets in China have recently begun to indicate signs of recovery, however European and North American markets continue to remain challenged given ongoing restrictions on business and travel. Several automotive plants, including plants operated by certain of our more significant customers, experienced closures during the first quarter. General industrial end markets reflect indications of further softening from restricted levels of investment and capital expenditures. Orders within these end markets have continued to decline throughout the first quarter and into the second quarter as a result of the COVID-19 disruption, with further sales deterioration anticipated throughout the second quarter. These markets are expected to recover slowly as the global economic environment improves. Medical end markets are expected to remain favorable. For overall industrial end-markets, the manufacturing Purchasing Managers' Index ("PMI") has reflected the impacts of COVID-19. PMI in both North America and Europe has further deteriorated since December 31, 2019, to below 50 within both regions as of March 31, 2020. PMI in China declined to nearly 40 through February 2020, however it has gradually recovered through March, returning to 50 as of March 31, 2020. Global forecasted production for light vehicles has continued to decline within the Europe, China and North America markets throughout the first quarter of 2020. Within our Molding Solutions business, the global medical market remains healthy, while the automotive hot runner market remains soft given the delay in model launches by automotive original equipment manufacturers, further intensified by the impacts of COVID-19. Proposed environmental regulations affecting product and packaging composition and disposability may continue to impact sales within these end markets. Overall industrial end-markets may also be impacted by uncertainty related to current and proposed tariffs announced by the United States and the China governments, although developments in this area have been muted given the global shift in focus to combating COVID-19. As noted above, our first three months of sales were negatively

impacted by $4.5 million from fluctuations in foreign currencies. To the extent that the U.S. dollar fluctuates relative to other foreign currencies, our sales may continue to be 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, however operating margins may be impacted. Although the Company's near-term focus remains on the preservation of cash and liquidity given the disruption caused by COVID-19, the Company also remains focused long term 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 and management continues to evaluate such opportunities.

Given the recent pressures on sales growth resulting from COVID-19, the Company is focused on the proactive management of costs as it takes action to mitigate the impacts on operating profit. While management also remains focused on strategic investments and new product and process introductions in the long term, driving productivity by leveraging the Barnes Enterprise System in the short-term is a strategic initiative. Operating profit is anticipated to be impacted by changes in sales volume noted above, mix and pricing, and the levels of short term investments made within each of the Industrial businesses. Operating profit may also be impacted by enactment of or changes in tariffs, trade agreements and trade policies that may affect the cost and/or availability of goods, including aluminum and steel. Costs associated with new product and process introductions, restructuring and other cost initiatives, strategic investments and the integration of acquisitions may negatively impact operating profit.

Aerospace

	Three Months Ended March 31,			
(in millions)	**2020**	**2019**	**Change**	
Sales	$ 131.6	$ 134.2	$ (2.6)	(2.0)%
Operating profit	31.4	29.1	2.2	7.7 %
Operating margin	23.9%	21.7%		

The Aerospace segment reported sales of $131.6 million in the first quarter of 2020, a 2.0% decrease from the first quarter of 2019. A sales decrease within the OEM business was partially offset by increases within the aftermarket businesses. The decline in OEM sales was attributed to the 737 Max aircraft, following a suspension of production by Boeing. Sales within the aftermarket repair and overhaul ("MRO") and spare parts businesses increased during the first quarter of 2020 as airline traffic and aircraft utilization remained strong in the first quarter, with additional volumes being obtained largely from existing customers. Beginning in late March 2020, Aerospace began to experience demand softness resulting from the negative impacts of the COVID-19 pandemic and a resultant decline in aircraft utilization and the removal of aircraft from service by certain airlines. See additional discussion below and within Part II, Item 1A. Sales within the segment are largely denominated in U.S. dollars and therefore were not significantly impacted by changes in foreign currency.

Operating profit at Aerospace in the first quarter of 2020 increased 7.7% from the first quarter of 2019 to $31.4 million. The operating profit increase resulted from the profit impact of the increased volumes within the aftermarket businesses, as discussed above. Operating margin increased from 21.7% in the 2019 period to 23.9% in the 2020 period primarily as a result of strength within the MRO and spare parts businesses.

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. With the onset of the COVID-19 pandemic, previously strong aerospace end markets have recently come under increased pressure. The OEM business is anticipated to experience challenges from declining aircraft demand and production cuts at Boeing and Airbus. The duration and depth of the aerospace disruptions are not determinable at this time. Backlog at OEM was $703.1 million at March 31, 2020, a decrease of 12.2% since December 31, 2019, at which time backlog was $800.7 million, with a significant portion of this decline resulting from changes in General Electric's ("GE") production schedules for aircraft engines. If the COVID-19 pandemic continues to have a material impact on the airline and aviation industry, including our more significant OEM customers, it could materially affect our Aerospace business and results of operations. Backlog may decline further as Aerospace customers adjust orders based on their changing aircraft production schedules. Approximately 45% of OEM backlog is currently scheduled to ship in the next 12 months. The Aerospace OEM business may also 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, vendor sourcing capacity and the use of alternate materials. Additional impacts may include the 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.

In the Aerospace aftermarket business, the COVID-19 pandemic is also impacting previously strong aerospace end markets. Significantly reduced aircraft utilization, increased levels of aircraft being removed from service, and reduced airline profitability are expected to impact our business on a go forward basis. Sales in the Aerospace aftermarket business may also be impacted by 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. Management believes that its Aerospace aftermarket business continues to be 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"). The MRO business may also 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 economics associated with new fuel efficient technologies.

Given the recent pressures on sales growth resulting from COVID-19, the Company is focused on the proactive management of costs as it takes action to mitigate an anticipated deterioration of operating profit. Management also remains focused on strategic investments and new product and process introductions. Maintaining productivity through the application of the Barnes Enterprise System continues as a key initiative. Operating profit is expected to be affected by the impact of the changes in sales volume noted above, mix and pricing, particularly as they relate to the highly profitable aftermarket RSP spare parts business, and investments made in each of its businesses. Operating profits may also be impacted by potential changes in tariffs, trade agreements and trade policies that may affect the cost and/or availability of goods. Costs associated with new product and process introductions, the physical transfer of work to other global 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 maintains sufficient liquidity and will continue to evaluate ways to enhance its liquidity position as it navigates through the disrupted business environment that has resulted from COVID-19.

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 2020 will generate sufficient cash to fund operations. Given the recent global market disruptions caused by the COVID-19 pandemic, the Company is closely monitoring its cash generation, usage and preservation including the management of working capital to generate cash. The Company does not currently anticipate requiring any additional debt facilities, nor does it anticipate a material change in the terms or covenants pertaining to its current facilities. See additional discussion regarding currently available debt facilities below. To better align costs with the current business environment, the Company has taken several actions which include temporary reductions in compensation for salaried employees including Company officers and Board directors, employee furloughs and reductions in discretionary expenses. The Company continues to invest within its businesses, with its estimate of 2020 capital spending being lowered to approximately $45 million.

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 increased 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. In September 2018, the Company and one of its wholly owned subsidiaries entered into a Sale and Purchase Agreement to acquire Gimatic S.r.l. In conjunction with the Acquisition, the Company requested additional borrowings of $150.0 million that was provided for under the existing accordion feature. The Administrative Agent for the lenders approved the Company's access to the accordion feature and on October 19, 2018 the lenders formally committed the capital to fund such feature, resulting in the execution of the fifth amendment to the Amended Credit Agreement (the "Fifth Amendment"). The Fifth Amendment, effective October 19, 2018, thereby increased the borrowing availability of the existing facility to $1,000.0 million. The Company may also request access to the residual $200.0 million of the accordion feature. 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%. Multi-currency borrowings, pursuant to the Amended Credit Agreement, bear interest at their respective interbank offered rate (i.e. Euribor) or 0.00% (higher of the two rates) plus a margin of between 1.10% and 1.70%.

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 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 March 31, 2020, the Company was in compliance with all covenants under the Note Purchase Agreement.

The Company's borrowing capacity is 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 ("Total Debt Ratio") 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. A permitted acquisition is defined as an acquisition exceeding $150.0 million, for which the acquisition of Gimatic qualified. With the completion of a permitted acquisition, the Senior Debt Ratio cannot exceed 3.50 times and the Total Debt Ratio cannot exceed 4.25 times. The increased ratios are allowed for a period of four fiscal quarters subsequent to the close of the permitted acquisition and therefore expired in the fourth quarter of 2019. At March 31, 2020, 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 March 31, 2020. The actual ratio at March 31, 2020 was 2.39 times, as defined.

During the first three months of 2020, the Company repurchased 0.4 million shares of the Company's stock under the publicly announced Repurchase Program, at a cost of $15.6 million. See "Part II - Item 2 - Unregistered Sales of Equity Securities and Use of Proceeds". Management has now suspended share repurchase activity as a result of the COVID-19 pandemic. Given the uncertainty of the current business environment at this time, the Company does not have an expected timeframe as to when share repurchases will resume.

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 March 31, 2020, the Company had $320.9 million unused and available for borrowings under its $1,000.0 million Amended Credit Facility, subject to covenants in the Company's revolving debt agreements. At March 31, 2020, additional borrowings of $464.6 million of Total Debt including $294.2 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, however the probability of an acquisition or divestiture in the near-term is unlikely given the current business environment. Nonetheless, the Company continues to analyze potential acquisition targets and end markets that meet our strategic criteria with an emphasis on proprietary, highly-engineered industrial technologies. The Company believes its credit facilities and access to capital markets, coupled with cash generated from operations, are adequate for its anticipated future requirements. At this time, the Company has not drawn on its debt agreements as a result of COVID-19, as it believes the availability of those funds are not at risk given the strength of the underlying bank syndicate. The Company maintains communication with its bank syndicate as it continues to monitor its cash requirements.

The Company had $27.9 million in borrowings under short-term bank credit lines at March 31, 2020.

The Company entered into an interest rate swap agreement (the "Swap") on April 28, 2017, with one bank, which converts 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 March 31,

2020 and December 31, 2019, the Company's total borrowings were comprised of approximately 25% fixed rate debt and 75% variable rate debt.

The United Kingdom's Financial Conduct Authority, which regulates the London Interbank Offered Rate ("LIBOR"), announced its intent to phase out the use of LIBOR by the end of 2021. The U.S. Federal Reserve, in conjunction with the Alternative Reference Rates Committee, a steering committee comprised of large U.S. financial institutions, identified the Secured Overnight Financing Rate ("SOFR") as its preferred benchmark alternative to U.S. dollar LIBOR. Published by the Federal Reserve Bank of New York, SOFR represents a measure of the cost of borrowing cash overnight, collateralized by U.S. Treasury securities, and is calculated based on directly observable U.S. Treasury-backed repurchase transactions. The Company's Amended Credit Agreement and corresponding interest rate Swap are tied to LIBOR, with both maturing in early 2022, as noted above. The Company is evaluating the potential impact of the replacement of LIBOR, but does not anticipate a material impact on our business, financial condition, results of operations and cash flows.

The Company completed the sale of the Seeger business to KNG effective February 1, 2020. Gross proceeds received were 39.6 million Euros ($43.7 million). The Company yielded net cash proceeds of $36.9 million after consideration of cash sold and transaction costs. The final amount of proceeds from the sale is subject to post-closing adjustments. Resulting tax charges of $4.2 million were recognized in the first quarter of 2020 following the completion of the sale. The Company utilized the proceeds from the sale to reduce debt under the Amended Credit Facility.

At March 31, 2020, the Company held $112.8 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 2019, the Company contributed $15.0 million of discretionary contributions to its U.S Qualified pension plans. The Company currently does not plan to make any additional discretionary contributions to its U.S. Qualified pension plans, however approximately $4.4 million is expected to be made into its U.S. Non-qualified and international pension plans throughout 2020.

Cash Flow

	Three Months Ended March 31,		
(in millions)	**2020**	**2019**	**Change**
Operating activities	$ 47.2	$ 53.1	$ (5.9)
Investing activities	18.5	(13.4)	31.9
Financing activities	(43.6)	(37.0)	(6.6)
Exchange rate effect	(3.1)	0.1	(3.2)
Increase in cash	$ 19.0	$ 2.8	$ 16.2

Operating activities provided $47.2 million in the first three months of 2020 compared to $53.1 million in the first three months of 2019. Operating cash flows in the 2019 period included cash generated by working capital of $2.5 million as compared with a use of $1.9 million in the 2020 period, which was driven by growth in inventory.

Investing activities generated $18.5 million in the first three months of 2020 and used $13.4 million in the first three months of 2019. Net cash proceeds of $36.9 million, less $6.6 million which is classified as restricted cash (recorded within other assets on the Consolidated Balance Sheet as of March 31, 2020), from the sale of the Seeger business are included in investing activities for the 2020 period. See Note 2 of the Consolidated Financial Statements. Investing activities in the 2020 period also included capital expenditures of $11.9 million compared to $13.7 million in the 2019 period. The Company expects capital spending in 2020 to approximate $45 million.

Financing activities in the first three months of 2020 included a net decrease in borrowings of $12.7 million compared to $28.3 million in the comparable 2019 period. In 2019, the Company borrowed 44.1 million Euros ($49.5 million) under the Amended Credit Facility through an international subsidiary. The proceeds were distributed to the Parent Company and subsequently used to pay down U.S. borrowings under the Amended Credit Agreement. During the first three months of 2020, the Company repurchased 0.4 million shares of the Company's stock at a cost of $15.6 million. There were no repurchases under the Repurchase Program during the first three months of 2019. Total cash used to pay dividends was $8.1 million in the 2020 period compared to $8.2 million in the 2019 period. Other financing cash flows during the first three months of 2020 and 2019

include $7.2 million and $1.3 million, respectively, of net cash payments resulting from the settlement of foreign currency hedges related to intercompany financing.

The Company maintains borrowing facilities with banks to supplement internal cash generation. At March 31, 2020, $679.1 million was borrowed at an average interest rate of 1.44% under the Company's $1,000.0 million Amended Credit Facility which matures in February 2022. In addition, as of March 31, 2020, the Company had $27.9 million in borrowings under short-term bank credit lines. At March 31, 2020, the Company's total borrowings were comprised of 25% fixed rate debt and 75% 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 respective 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 March 31, 2020
Net income	$	154.1
Add back:		
Interest expense		19.8
Income taxes		52.4
Depreciation and amortization		97.6
Adjustment for non-cash stock based compensation		12.5
Amortization of Gimatic acquisition inventory step-up		(1.9)
Due diligence and transaction expenses		4.0
Non-cash impairment charge (see Note 2)		5.6
Other adjustments		(3.2)
Consolidated EBITDA, as defined within the Amended Credit Agreement	$	340.9
Consolidated Senior Debt, as defined, as of March 31, 2020	$	813.7
Ratio of Consolidated Senior Debt to Consolidated EBITDA		2.39
Maximum		3.25
Consolidated Total Debt, as defined, as of March 31, 2020	$	813.7
Ratio of Consolidated Total Debt to Consolidated EBITDA		2.39
Maximum		3.75
Consolidated Cash Interest Expense, as defined, as of March 31, 2020	$	19.8
Ratio of Consolidated EBITDA to Consolidated Cash Interest Expense		17.18
Minimum		4.25

The Amended Credit Agreement allows for certain adjustments within the calculation of the financial covenants. Other adjustments consist primarily of changes in accounting as permitted under the Amended Credit Agreement. The Company's financial covenants are measured as of the end of each fiscal quarter. At March 31, 2020, additional borrowings of $464.6 million of Total Debt including $294.2 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 March 31, 2020 were $320.9 million; however, the borrowing capacity was limited by the debt covenants to $294.2 million at March 31, 2020.

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, 2019. 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, 2019. Actual results could differ from those estimates. There have been no material changes to such judgments and estimates.

EBITDA

Earnings before interest expense, income taxes, and depreciation and amortization ("EBITDA") for the first quarter of 2020 was $71.3 million compared to $73.9 million in the first quarter of 2019. EBITDA is a measurement not in accordance with generally accepted accounting principles (“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. 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. Accordingly, the calculation has limitations depending on its use.

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

	Three Months Ended March 31,	
	2020	2019
Net income	$ 29.7	$ 34.0
Add back:		
Interest expense	4.3	5.1
Income taxes	13.7	9.7
Depreciation and amortization	23.6	25.1
EBITDA	$ 71.3	$ 73.9

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. 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 and avoid infringing upon 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; the impacts of the COVID-19 pandemic on our business, including on demand, supply chains, operations and our ability to maintain sufficient liquidity throughout the unknown duration and severity of the crisis; 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; government tariffs, trade agreements and trade policies; the impact of new or revised tax laws and regulations; the adoption of laws, directives or regulations that impact the materials processed by our products or their end markets; changes in raw material or product prices and availability; restructuring costs or savings; the continuing impact of prior acquisitions and divestitures;

integration of acquired businesses; 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; product liabilities 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 (including the COVID-19 pandemic); 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, 2019.

Item 4. Controls and Procedures

Management, including the Company's President and Chief Executive Officer and Senior Vice President, Finance 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 Senior Vice President, Finance 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 Senior Vice President, Finance 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 first fiscal quarter of 2020 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 1A. Risk Factors

The following represents a material change in our Risk Factors from those disclosed in Part I, Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2019.

The widespread outbreak of an illness or any other communicable disease, or any other public health crisis could adversely affect our business, results of operations and financial condition.

The COVID-19 pandemic ("COVID-19") has negatively impacted the global economy, disrupted global supply chains and created significant volatility, uncertainty and disruption within financial markets. COVID-19 has adversely affected, and poses risks to, our business, including our operational and financial performance. The extent to which COVID-19 impacts our performance depends on numerous evolving factors, many of which are highly uncertain, including, among other things, the duration and spread of COVID-19, its severity, and the actions taken in response to it; the effect on our customers and customer demand for our products and services; our ability to sell and provide our products and services, including as a result of travel restrictions and "shelter in place" orders; the ability of our customers to pay for our products and services; and any closures of our offices and facilities as well as those of our customers and suppliers. Customers may also decelerate decision making, delay planned work or seek to terminate existing agreements. An extended period of global supply chain and economic disruption could materially affect our business, results of operations, access to sources of liquidity and financial condition.

Additionally, COVID-19 has had a material impact on the air travel and aviation industries. Several countries, including the United States, have taken steps to restrict air travel, and many companies have adopted policies prohibiting non-essential business travel by their employees. Even in the absence of formal restrictions and prohibitions, contagious illness and fear of contagion could adversely affect travel behavior. Current travel restrictions, as well as expected changes in the propensity for the general public to travel by air as a result of COVID-19, has caused reductions in demand for commercial aircraft. If COVID-19 continues to have a material impact on the airline and aviation industry, including on General Electric, which accounted for approximately 20% of our total sales and 55% of Aerospace's net sales in 2019, and our other large customers, it could materially affect the business and results of operations of our Aerospace business.

To the extent COVID-19 or any worsening of the global business and economic environment as a result thereof adversely affects our business and financial results, it may also have the effect of heightening many of the other risks described in Part I, Item 1A, "Risk Factors," in our Annual Report on Form 10-K for our fiscal year ended December 31, 2019.

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]
January 1-31, 2020	938	$ 64.64	—	4,100,000
February 1-29, 2020	223	$ 65.07	—	4,100,000
March 1-31, 2020	396,192	$ 39.27	396,000	3,704,000
Total	397,353 [1]	$ 39.35	396,000	

(1) Other than 396,000 shares purchased during the first quarter of 2020, which were purchased as part of the Company's Repurchase Program (defined below), all acquisitions of equity securities 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) At March 31, 2019, 1.5 million shares of common stock had not been purchased under the publicly announced Repurchase Program (the “Program”). On April 25, 2019, the Board of Directors of the Company increased the number of shares authorized for repurchase under the Program by 3.5 million shares of common stock (5.0 million authorized, in total). The Program permits open market purchases, purchases under a Rule 10b5-1 trading plan and privately negotiated transactions.

Item 6. Exhibits

Exhibit 10.1	Offer Letter to James C. Pelletier dated February 14, 2020.
Exhibit 10.2	Form of Barnes Group Inc. Stock and Incentive Award Plan Performance Share Award Summary of Grant and Performance Share Award Agreement for Officers and Other Individuals as Designated by the Compensation and Management Development Committee dated as of February 13, 2020.
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 - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL 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: April 27, 2020

/s/ CHRISTOPHER J. STEPHENS, JR.

Christopher J. Stephens, Jr.
Senior Vice President, Finance
Chief Financial Officer
(Principal Financial Officer)

Date: April 27, 2020

/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 March 31, 2020

Exhibit No.	Description	Reference
10.1	Offer Letter to James C. Pelletier dated February 14, 2020.	Filed with this report.
10.2	Form of Barnes Group Inc. Stock and Incentive Award Plan Performance Share Award Summary of Grant and Performance Share Award Agreement for Officers and Other Individuals as Designated by the Compensation and Management Development Committee dated as of February 13, 2020.	Filed with this report.
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 - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL 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.

EXHIBIT 15

April 27, 2020

Securities and Exchange Commission
100 F Street, N.E.
Washington, DC 20549

Commissioners:

We are aware that our report dated April 27, 2020 on our review of interim financial information of Barnes Group Inc., which appears in this Quarterly Report on Form 10-Q, is incorporated by reference in the Registration Statements on Form S-8 (Nos. 333-205952, 333-196013, 333-150741, and 333-133597) of Barnes Group Inc.

Very truly yours,

/s/ PricewaterhouseCoopers LLP

Hartford, Connecticut

EXHIBIT 10.1

Patrick J. Dempsey
President and Chief Executive Officer
pjdempsey@BGInc.com

123 MAIN STREET
BRISTOL, CT 06010-6307

T: 860.973-2121
F: 860.582-3228
BGInc.com

February 14, 2020

Mr. James C. Pelletier
61 State Street
Wethersfield, Connecticut 06109

Dear Jim:

We are pleased to offer you the position of **Senior Vice President, General Counsel and Secretary**, Barnes Group Inc. at an annual salary of $345,000 (paid monthly in advance), effective April 1, 2020. In this position you will report to me and remain headquartered in Bristol, Connecticut.

Effective April 1, 2020, you will continue to participate in the Management Incentive Compensation Plan (2020) and the Performance-Linked Bonus Plan for Selected Executive Officers (beginning in 2021). Your target incentive under this plan is 45% of base salary, with a maximum payout of 135% of base salary and is based 100% on Barnes Corporate results. For the period of January 1, 2020 through March 31, 2020, your annual incentive target will remain 30% of base salary, with a maximum payout of 90% of base salary and remain based on 50% Barnes Aerospace Consolidated (less RSP) and 50% Barnes Corporate results. Annual performance measures will be communicated in early 2020 once approved by the Compensation and Management Development Committee of the Board of Directors. Your total cash compensation package is $500,250 at target and $810,750 at maximum on an annualized basis. Payouts are subject to the provisions of the plan and are normally paid in late February of the year immediately following the plan year. You must be employed on the date bonuses are paid to be eligible for a payout.

Effective on your date of appointment, you will be awarded the following:

- 5,424 Stock Options, with an exercise price equal to the fair market value of Barnes Group's stock (as defined in the 2014 Barnes Group Inc. Stock and Incentive Award Plan) on your date of employment. These options will vest one-third each on the 18th, 30th, and 42nd month anniversaries of the date of grant. Stock options are a speculative financial vehicle driven solely by stock price appreciation. Fair market value stock options have no intrinsic value absent such appreciation.

- 1,855 Time-vested Restricted Stock Units, with each unit having the equivalent value of one share of Barnes Group stock. The restrictions will lapse one-third each on the 18th, 30th, and 42nd month anniversaries of the date of grant. You will receive dividends on these restricted stock units as such dividends are declared by the Company.

- 3,091 Performance Share Awards, with each unit having the equivalent value of one share of Barnes Group stock. Performance share awards vest on the basis of the performance of Barnes Group over three years. Two of the performance measures, Total Shareholder Return (TSR) and EBITDA Growth are measured on a relative basis against the Russell 2000 companies. The third measure, Return on Invested Capital (ROIC), is measured on an absolute basis against "pre-established targets" as set by the Compensation and Management

Development Committee of the Board of Directors. Shares earned, if any, will be paid out upon vesting. Dividends will accrue on this performance share award and be paid in the same ratio as the underlying shares.

You will continue to be eligible for annual long-term awards beginning with the 2021 grant cycle. Your current target value for annual long-term compensation is $400,000. We currently expect these awards to be in the form of stock options, restricted stock units, and performance share awards. All awards are subject to the discretion of the Compensation and Management Development Committee.

You will be expected to sign an agreement that provides that, in certain circumstances, you may be subject to a "claw back" of any cash or equity awards earned if the Company restates its financial results lower than those upon which awards were calculated (with the exception of restatements not caused by misconduct or error) to comply with generally accepted accounting principles.

Stock ownership guidelines have been established for our leadership team to ensure that management's interests are aligned with our stockholders' interests. The guideline for your
position is three times your base salary. Ownership includes directly and beneficially owned shares, stock retained following the distribution of vested restricted stock units and earned performance share awards, and exercises of stock options, stock unit holdings under the Barnes Group Inc. Retirement Savings Plan (RSP), and stock owned through the Barnes Group Inc. Employee Stock Purchase Plan (ESPP). In addition, two-thirds of the value of unvested restricted stock units will be credited toward ownership guidelines. Shares granted by the Company (100% of the after tax value of equity grants vesting, or options exercised) must be retained until you have met your ownership guidelines. Once met, your multiple of salary requirement converts into a "fixed" number of shares needed to meet that requirement. Going forward, participants must maintain, at minimum, their "fixed" number of shares while employed with the Company in an ownership designated position.

While there is no specific timeframe requirement for achieving the ownership requirement, participants are expected to make steady progress and maintain ownership of any shares realized through vesting of restricted stock units, performance share awards, and stock option exercises.

You will continue to participate in the Executive Group Term Life Insurance Plan "EGTLIP" and your death benefit will increase to $1,380,000 (four times your current salary). EGTLIP is an individual policy that you own and, as such, the policy is portable. Barnes Group Inc. pays the premium for as long as you remain with the Company.

As an Officer of the Company, you are entitled to coverage for an annual executive physical and financial planning assistance. The executive physical benefit provides reimbursement for expenses associated with an annual physical examination with a provider of your choice. The financial planning benefit provides reimbursement for professional financial planning assistance, tax planning, and/or tax preparation services, up to a maximum of $8,000 (for the first year) and a maximum of $4,000 per year thereafter. There is no tax gross up associated with these benefits.

Your participation in the Company's employee benefit programs remains in effect, unchanged, although certain participation and benefit levels may change commensurate with your increase in salary. Your vacation eligibility will remain the same.

This letter sets forth our offer of a change in position and is not intended to create an expressed or implied contract of any kind, nor shall it be construed to constitute a promise or contract of lifetime or continuing employment. Your employment with Barnes Group Inc. is at will and may be terminated at any time, with or without cause, by either you or the Company. The terms of this offer supersede and take the place of any prior written or oral offers of employment. Barnes Group Inc. also has the right to change, interpret, withdraw, or add to any of the policies, benefits, terms or conditions of employment at any time. The terms and conditions of this letter may only be amended or modified in writing by me.

If you have any questions with regard to the above, please contact Dawn Edwards, Senior Vice President, Human Resources, Barnes Group Inc., at (860) 973-2119. To accept this offer, please sign, date and return the enclosed duplicate copy of this letter to Dawn, no later than February 17, 2020.

Jim, I look forward to you being a part of the Barnes Group senior leadership team and contributing to the overall success, growth and profitability of the company.

Sincerely,

/s/ PATRICK J. DEMPSEY

Patrick J. Dempsey
President and Chief Executive Officer

Agreed to and accepted:

/s/ JAMES C. PELLETIER February 14, 2020
James C. Pelletier **Date**

EXHIBIT 10.2

BARNES GROUP INC.

STOCK AND INCENTIVE AWARD PLAN

PERFORMANCE SHARE AWARD SUMMARY OF GRANT

For Officers and Other Individuals as Designated by the CMDC

Barnes Group Inc., a Delaware corporation (the "Company"), under the 2014 Barnes Group Inc. Stock and Incentive Award Plan, as may be amended from time to time (the "Plan"), hereby grants to the individual named below ("You" or "Grantee") this Performance Share Award (also referred to as Performance Share Unit Award) (the "Grant"), representing the target number of performance shares set forth below (each a "Performance Share") that may be earned by You based on the level of achievement of the Performance Goals. Each Performance Share entitles You to one share of Common Stock. The actual number of Performance Shares earned will be based on the actual performance level achieved with respect to the Performance Goals set forth on Schedule A. The Performance Shares are subject to this Performance Share Award Summary of Grant (the "Summary of Grant"), and the Performance Share Award Agreement attached as Exhibit A (the "Performance Share Award Agreement") and the Plan, both of which are incorporated herein by reference and made part hereof. The Grant also entitles You to be paid Dividend Equivalents as set forth in the Performance Share Award Agreement. Unless otherwise defined, capitalized terms used in this Summary of Grant and the Performance Share Award Agreement have the meanings set forth in the Plan.

Grantee:	[_____]
Grant Date:	February XX, 20XX
Target Award:	[_____] Performance Shares
Performance Period:	The 3 year period beginning on January 1, 20XX and ending on December 31, 20XX
Performance Goals:	The Performance Goals are based on the performance measures set forth on Schedule A.
Vesting Schedule	The Performance Shares will be earned based on the performance level achieved with respect to the Performance Goals if, except as provided otherwise in the Performance Share Award Agreement, You continue employment with Company through the third anniversary of the Grant Date. The number of Performance Shares set forth above is equal to the target number of shares of Common Stock that the Grantee will earn for 100% achievement of the Performance Goals (referred to as the "Target Award"). The actual number of shares of Common Stock that You will earn with respect to the Performance Shares may be greater or less than the Target Award, or even zero, and will be based on the performance level achieved by the Company with respect to the Performance Goals, as set forth on Schedule A. Performance level is measured based on the threshold, target and maximum performance levels set forth on Schedule A. Each performance level is calculated as a percentage of target level performance. Threshold performance level is 33% of target, target performance level is 100% of target, maximum performance level is 150% of target, maximum+ performance level is 200% of target and maximum++ performance level is 250% of target. If actual performance is between performance levels, the number of Performance Shares earned will be interpolated on a straight line basis for pro-rata achievement of the Performance Goals, rounded down to the nearest whole number. Failure to achieve the threshold performance level with respect to a Performance Goal will result in no Performance Shares being earned with respect to that Performance Goal.

Grant Acceptance:

You agree to be bound by the Plan, the Performance Share Award Agreement and this Summary of Grant by electronically acknowledging and accepting the Grant following the date of the Company's electronic or other written notification to You of the Grant. You accept as binding, conclusive and final all decisions or interpretations of the Committee upon any questions arising under the Plan, this Summary of Grant or the Performance Share Award Agreement. In no event

do You acquire any rights to the Grant unless You electronically accept, no later than 60 days after the Grant Date, this Summary of Grant and the attached Performance Share Award Agreement.

You acknowledge that the Plan prospectus is available as part of the online grant package with E*TRADE, and that paper copies of the Plan and the Plan prospectus are available upon request by contacting Stockholder Relations, 860-973-2106.

Schedule A

The number of Performance Shares that may be earned will be determined based on the actual performance level achieved with respect to the following performance measures during the Performance Period: 3-Year Total Stockholder Return ("TSR"); 3-Year Return on Invested Capital ("ROIC"); and 3-Year EBITDA Growth (collectively referred to as the "Performance Goals," and each individual measure, a "Performance Goal"). The chart below sets forth the applicable weighting of each performance measure and the Performance Goals needed to be achieved at each performance level for such performance measure during the Performance Period:

January 1, 20XX-December 31, 20XX Performance Period

Performance Measure	Weight	Performance Level	Performance Goals	Performance Shares Earned as a Percentage of Target (% of Target)*
3-Year TSR**	33.3334%	Threshold	Achieve 33rd percentile ranking within the Russell 2000	33%
		Target	Achieve 50th percentile ranking within the Russell 2000	100%
		Maximum	Achieve 66th percentile ranking within the Russell 2000	150%
		Maximum+	Achieve 75th percentile ranking within the Russell 2000	200%
		Maximum++	Achieve 85th percentile ranking within the Russell 2000	250%
3-Year ROIC***	33.3333%	Threshold	Achieve x.xx% 3-Year ROIC	33%
		Target	Achieve x.xx% 3-Year ROIC	100%
		Maximum	Achieve x.xx% 3-Year ROIC	150%
		Maximum+	Achieve x.xx% 3-Year ROIC	200%
		Maximum++	Achieve x.xx% 3-Year ROIC	250%
3-Year EBITDA Growth****	33.3333%	Threshold	Achieve 33rd percentile ranking within the Russell 2000	33%
		Target	Achieve 50th percentile ranking within the Russell 2000	100%
		Maximum	Achieve 66th percentile ranking within the Russell 2000	150%
		Maximum+	Achieve 75th percentile ranking within the Russell 2000	200%
		Maximum++	Achieve 85th percentile ranking within the Russell 2000	250%

* The actual number of Performance Shares that will be earned with respect to the 3-Year TSR and 3-Year EBITDA Growth performance measures is based on the Company's percentile ranking within the Russell 2000 Index at the end of the Performance Period. The actual number of Performance Shares that will be earned with respect to the 3-Year ROIC performance measure is based on the Company's performance compared to pre-established goals as determined by the Committee and set forth in the chart above. Each performance measure will be evaluated on a measure by measure basis, and once performance results are determined as to each individual performance measure, those results will be aggregated and the weighting applied. When assessing each performance measure, actual performance level achievement between each performance level will be interpolated on a straight line basis rounded down to the nearest whole number; provided that if the actual performance level achieved does not meet threshold performance (i.e., less than 33%) for the applicable performance measure, then no Performance Shares will be earned for that performance measure pursuant to this Grant. Threshold level performance may be achieved for one performance measure and not another based on the Company's actual performance during the Performance Period. The actual number of Performance Shares earned will be determined by the Committee based on the actual performance level achieved with respect to each of the applicable Performance Goals, factoring in the weighting for each performance measure. The maximum number of Performance Shares that may be earned pursuant to this Grant is capped at 250% of the Target Award.

** 3-Year TSR represents the comparison between the Opening Average Share Value and the Closing Average Share Value, plus cumulative dividends during the Performance Period. At the end of the Performance Period, the TSR for the Company and each company in the Russell 2000 Index will be calculated by dividing the Closing Average Share Value by the Opening Share Value. For purposes of this Grant, the term "Closing Average Share Value" means the average closing value of the common stock, for the 20 trading days ending on the last day of the Performance Period (i.e., the 20 trading days ending on December 31, 2022 (the "20-day period"), which will be calculated as follows: (i) determine the closing price of the common stock on each trading date during the 20-day period, (ii) average the amounts so determined for the 20-day period; the term "Opening Average Share Value" means the average of the closing price of a share of common stock for the 20 trading days preceding the start of the Performance Period (i.e., January 1, 2020).

*** 3-Year ROIC represents the ratio of the Company's Net Income and the Company's Total Average Invested Capital during the Performance Period. At the end of the Performance Period, the ROIC for the Company will be calculated for the Performance Period by dividing the Net Income during the Performance Period by Total Average Invested Capital during the Performance Period, and then divided by three. For purposes of this Grant, "Net Income" means the Company's net income, adjusted for accounting changes and after-tax interest expense, and "Total Average Invested Capital" means the sum of the Company's average total debt, stockholders equity and any non-controlling interest for the performance period computed on a four point basis. The 3-Year ROIC calculation is subject to the provisions as set forth below.

****3-Year EBITDA Growth represents Operating Income Before Depreciation and Amortization. EBITDA will be computed as EBITDA in Year 3 divided by EBITDA in the year preceding this award (i.e. 2019). The 3-Year EBITDA Growth calculation is subject to the provisions as set forth below.

3-Year ROIC and 3-Year EBITDA Growth shall be determined in accordance with generally accepted accounting principles (GAAP) and may include or exclude (or be adjusted to include or exclude) unusual or infrequently occurring items, the impact of charges for restructurings or productivity initiatives, non-operating items, discontinued operations and other unusual and non-recurring items, the effects of currency fluctuations, the effects of financing activities (by way of example, without limitation, the effect on earnings per share of issuing convertible debt securities), the effects of acquisitions and acquisition expenses, the effects of divesture and divesture expenses, and the effects of tax or accounting changes. However, notwithstanding the preceding sentence, unless the Committee determines otherwise either at the time it establishes the Performance Goals for an award or prior to the payment of an award, if any of the items referenced in the preceding sentence occurs, then such item shall be automatically excluded or included in determining the extent to which the Performance Goal has been achieved, whichever will produce the higher award (subject to any exercise of "negative discretion" by the Committee).

EXHIBIT A

PERFORMANCE SHARE AWARD AGREEMENT

Under the provisions of the 2014 Barnes Group Inc. Stock and Incentive Award Plan, as may be amended from time to time, (the "Plan"), the Compensation and Management Development Committee of the Company's Board of Directors (the "Committee") has authorized the execution of this Agreement. Capitalized terms used in this Agreement and not otherwise defined herein will have the same meaning as provided for in the Plan or Summary of Grant, as applicable.

NOW, THEREFORE, in consideration of the agreements of each, and for other good and valuable consideration, the parties agree as follows:

1. Definitions.

(a) "Cause" means (i) Your willful and continued failure to substantially perform Your duties with the Company (other than any such failure resulting from the Your incapacity due to physical or mental illness) or (ii) Your willful engaging in conduct which is demonstrably and materially injurious to the Company or its Subsidiaries, monetarily or otherwise.

(b) "Change in Control" has the meaning assigned to it in the Company's form of Severance Agreement in effect as of February 4, 2014.

(c) "Disability" means "disability" as defined in the Company's long-term disability plan as in effect from time to time (or, if that plan is not in effect at the time in question, as it was last in effect).

(d) "Good Reason" means, after any Change in Control, any one of the following acts by the Company, or failures by the Company to act, if You notify the Company that such act or failure to act has occurred within 90 days of the initial occurrence of such act or failure to act, and if such act or failure to act is not corrected within 30 days after You so notify the Company:

(i) the assignment to You of any duties materially inconsistent with Your position as an employee of the Company, or a material adverse alteration in the nature or status of Your responsibilities from those in effect immediately prior to a Change in Control;

(ii) a reduction by You in your annual base salary as in effect on the date hereof or as the same may be increased from time to time, by five percent (5%) or more or by $20,000 or more; or

(iii) the relocation of Your principal place of employment to a location more than 50 miles from Your principal place of employment immediately prior to a Change in Control, provided that such relocation increases Your round trip commuting time by 25% or more, or the Company's requiring You to be based anywhere other than such principal place of

employment (or permitted relocation thereof) except for required travel time on the Company's business to an extent substantially consistent with Your present business travel obligations.

(e) "Retirement" means a Separation of Service initiated by You on or after Retirement Age under circumstances that do not constitute Cause.

(f) "Retirement Age" means age 55 or later with a minimum of 10 full years of service with the Company and/or its Subsidiaries.

(g) "Separation from Service" means a "separation from service with the employer" within the meaning of Treasury Regulation Section 1.409A-1(h), where the "employer" means the Company and all corporations and trades or businesses with which the Company would be considered a single employer under Section 414(b) or Section 414(c) of the Code (as determined in accordance with the first sentence of Treasury Regulation Section 1.409A-1(h)(3)).

2. Contingent Dividend Equivalents. You may be entitled to receive from the Company the cash payments described below, if (and only if) the Performance Shares are earned during the Performance Period pursuant to the Performance Share Award Summary of Grant. You understand and agree that, if the Company cancels the Performance Shares, the Dividend Equivalents that would have been payable if those Performance Shares had not been cancelled will automatically be cancelled, without action by the Company (other than its action cancelling those Performance Shares) and without the payment of any consideration to You, unless the Committee provides otherwise when those Performance Shares are cancelled or at a prior time.

3. Calculation of Dividend Equivalents. At the end of the Performance Period, or a prior date on which a portion of the Performance Shares have been earned pursuant to this Agreement, (the "End Date") after the determination of the number of Performance Shares that have been earned, there will be calculated the dividends that were paid (other than a dividend paid in Common Stock, which is subject to the adjustment provided in Section 10 of the Plan) to the holders of Common Stock, the record date of which fell during the period commencing on the Grant Date and ending on the End Date (each a "Dividend Payment Date"). The Company will credit and pay to you, at the time specified in 5(a) below, an amount of money ("Dividend Equivalents") determined by multiplying (a) the number of Performance Share Shares earned on the End Date (if any), times (b) the dividend per share paid on each Dividend Payment Date. However, if the dividend is paid in property other than cash, the amount of money to be paid to You in respect of such dividend will be determined by multiplying (i) the number of the Performance Shares (if any), times (ii) the fair market value on each Dividend Payment Date of the property that was paid per share of Common Stock as a dividend on such Dividend Payment Date. The fair market value of the property that was paid will be determined by the Committee in its sole and absolute discretion.

Any provision of this Agreement to the contrary notwithstanding, in no event (except on Death, Disability or a Change in Control as a result of which Performance Shares are deemed earned pursuant to this Agreement) will any payment be made pursuant to this Section unless the

Committee certifies in writing that the performance goals applicable to the related Performance Shares and any other material terms (within the meaning of Treasury Regulation section 1.162-27(e)(5)) applicable to such payment were in fact satisfied.

4. Vesting of Grant. The Performance Shares will be earned based on the actual performance level achieved with respect to the Performance Goals set forth on Schedule A of the Performance Share Award Summary of Grant and You remaining continuously employed by the Company through the third anniversary of the Grant Date.

5. Forfeiture or Earning of Performance Share Awards Prior to the End of the Performance Period.

(a) Notwithstanding the vesting schedule contained in the Performance Share Award Summary of Grant, the vesting schedule may change under one of the following conditions:

(i) Voluntary Termination or Termination for Cause. If You initiate a Separation from Service other than as a result of (A) death, (B) Disability, or (C) Retirement or if you have a Separation from Service initiated by the Company and/or its Subsidiaries for Cause, in each case, before the third anniversary of the Grant Date, then the Grant will terminate with respect to all Performance Shares, whether or not earned as of the date of the Separation from Service, and You will not be entitled to any distribution of shares for any Performance Shares.

(ii) All Other Separations of Service. If You have a Separation from Service (A) due to (x) death, (y) Disability, or (z) Retirement or (B) that is initiated by the Company and/or its Subsidiaries without Cause after the 1 year anniversary of the Grant Date but before the last day of the Performance Period, then on the last day of the Performance Period, the number of Performance Shares that will be deemed earned will equal the number of Performance Shares actually earned pursuant to the Grant, as determined at the end of the Performance Period, multiplied by a fraction equal to the total days worked from the beginning of the Performance Period to the date of the Separation from Service, divided by the total number of days in the Performance Period.

(iii) Change in Control. If You remain employed with the Company from the Grant Date to the date, if any, on which a Change in Control occurs before the last day of the Performance Period, except as otherwise provided in Your employment agreement, if applicable, the number of Performance Shares that will be deemed earned will equal the sum of (A) the number of Performance Shares subject to the award earned for each completed year (1/3 of the total number that would be earned for the full Performance Period based upon actual performance in the completed year(s)) of the Performance Period, if any, based on the achievement of the Performance Goals, plus (B) the target number of Performance Shares for each incomplete year of the Performance Period, if you are terminated (1) by the Company without Cause or (2) You terminate employment for Good Reason, in either case, if such termination occurs on or within 2 years following a Change in Control.

(b) Acceptance. All Performance Shares that are not earned in accordance with the terms of this Agreement and the Performance Share Award Summary of Grant will be forfeited. By electronically accepting this Grant, You irrevocably consent to any forfeiture of Performance Shares required or authorized by this Agreement.

6. Issuance of Shares.

(a) Except as otherwise provided below, a share of Common Stock will be issued to You in payment of each Performance Share that is deemed earned pursuant to the terms of this Agreement as soon as practicable in the year (but no later than August 1) following the year in which such Grant is deemed earned (which date during that period will be determined by the Company). In the event a distribution is due under Section 5(a)(ii) prior to the end of the Performance Period, the shares will be issued as soon as practicable following the date of the event giving rise to the payment, but no later than 60 days following the date of the event. In the event a distribution is due under Section 5(a)(iii) prior to the end of the Performance Period, the shares will be issued on the first day of the seventh month following the date of termination.

(b) Notwithstanding any provision of this Agreement to the contrary, (i) no "distributions" (within the meaning of Treasury Regulation Section 1.409A-1(c)(3)(v)) of deferred compensation that is subject to Section 409A of the Code may be made pursuant to this Agreement to a "specified employee" (within the meaning of Treasury Regulation Section 1.409A-1(i)) ("Specified Employee") due to a Separation from Service before the date that is 6 months after the date of such Specified Employee's Separation from Service (or, if earlier than the end of the 6 month period, the date of his death); and (ii) any distribution that, but for the preceding clause (i), would be made before the date that is 6 months after the date of the Specified Employee's Separation from Service will be paid on the first day of the seventh month following the date of his Separation from Service (or, if earlier, within 14 days after the date of his death). For the avoidance of doubt, the preceding sentence will apply to any payment (and only to any payment) pursuant to this Agreement to which Code Section 409A(a)(2)(B)(i) (relating to Specified Employees) applies, and will not apply to any payment that is not subject to Code Section 409A as a result of Treasury Regulation Section 1.409A-1(b)(4) (relating to short-term deferrals) or otherwise. Your right to any series of payments pursuant to this Agreement will be treated as a right to a series of separate payments within the meaning of Treasury Regulation Section 1.409A-2(b)(2)(iii), including without limitation for purposes of the short-term deferral rule set forth in Treasury Regulation Section 1.409A-1(b)(4).

(c) In no event, except a Change in Control or a Grantee's Separation from Service as a result of death or Disability, as a result of which Performance Shares are deemed earned pursuant to this Agreement, will any shares be issued in payment of Performance Shares unless the Committee certifies in writing that the performance goals and any other material terms (within the meaning of Treasury Regulation Section 1.162-27(e)(5)) were in fact satisfied with respect to such Performance Shares. Such certification will be final, conclusive and binding on You, and on all other persons, to the maximum extent permitted by law.

(d) The shares to be issued will be credited to a brokerage account established by the Company in Your name (or, in the event of Your death, in the name of Your Beneficiary) in payment of such Performance Shares. All shares of Common Stock issued under this Agreement will be duly authorized, validly issued, fully paid and non-assessable.

7. Your Commitments; Recoupment.

(a) If You, at any time before the Grant terminates: (i) directly or indirectly, whether as an owner, partner, shareholder, consultant, agent, employee, investor or in any other capacity, accept employment by, render services for or otherwise assist any other business which competes with the business conducted by the Company or any of its Subsidiaries in which You worked during Your last 2 years with the Company or any of its Subsidiaries; (ii) directly or indirectly, hire or solicit or arrange for the hiring or solicitation of any employee of the Company or any of its Subsidiaries, or encourage any such employee to leave such employment; (iii) use, disclose, misappropriate or transfer confidential or proprietary information concerning the Company or any of its Subsidiaries (except as required by Your work responsibilities with the Company or any of its Subsidiaries); or (iv) are convicted of a crime against the Company or any of its Subsidiaries; or (v) engage in any activity in violation of the policies of the Company or any of its Subsidiaries, including without limitation the Company's Code of Business Ethics and Conduct, or, at any time, engage in conduct adverse to the best interests of the Company or any of its Subsidiaries; then should any of the foregoing events occur, the Grant will be canceled, unless the Committee, in its sole discretion, elects not to cancel such Grant. The obligations in this Section are in addition to any other agreements related to non-competition, non-solicitation and preservation of Company confidential and proprietary information entered into between You and the Company, and nothing herein is intended to waive, modify, alter or amend the terms of any such other agreement.

(b) You agree that You will be subject to any compensation, clawback and recoupment policies that may be applicable to You, as in effect from time to time and as approved by the Board or the Committee, whether or not approved before or after the Grant Date.

8. Restrictions on Grant. In no event may (a) You sell, exchange, transfer, assign, pledge, hypothecate, mortgage or dispose of the Grant or any interest therein, nor (b) the Grant or any interest therein be subject to anticipation, attachment, garnishment, levy, encumbrance or charge of any nature, voluntary or involuntary, by operation of law or otherwise and any attempt to do so, whether voluntary or involuntary, will be null and void and no other party will obtain any rights to or interest in the Grant. You may designate a Beneficiary to receive the Grant in the event of Your death in accordance with Section 2(c) of the Plan. Any Beneficiary will receive the Grant subject to all of the terms, conditions and restrictions set forth in this Agreement, including but not limited to the forfeiture provisions set forth in this Agreement.

9. Taxes and Withholding. The Committee may cause to be made, as a condition precedent to any payment or transfer of stock hereunder, appropriate arrangements for the withholding of any Federal, state or local taxes. If applicable, the Company will have the right,

in its discretion, to deduct from any Dividend Equivalents payable pursuant to this Agreement, and from any shares to be issued pursuant to this Agreement, cash and/or shares, valued at Fair Market Value on the date of payment, in an amount necessary to satisfy all Federal, state and local taxes required by law to be withheld with respect to such Dividend Equivalents, cash and/or shares. You may be required to pay to the Company, prior to delivery of certificates representing such shares and prior to such shares being credited to a book entry account in Your name, the amount of any such taxes. The Company will accept whole shares of Common Stock of equivalent Fair Market Value in payment of the Company's minimum statutory withholding tax obligations if You elect to make payment in shares.

10. Compliance with Law. The Company will make reasonable efforts to comply with all applicable federal and state securities laws. However, no shares or other securities will be issued pursuant to this Agreement if their issuance would result in a violation of any such law. If at any time the Committee determines, in its discretion, that the listing, registration or qualification of any shares subject to this Grant upon any securities exchange or under any state or Federal law, or the consent or approval of any government regulatory body, is necessary or desirable as a condition of, or in connection with, the granting of this Grant or the issue of shares hereunder, no rights under the Grant may be exercised and shares of Common Stock may not be issued pursuant to the Grant, in whole or in part, unless such listing, registration, qualification, consent or approval will have been effected or obtained free of any conditions not acceptable to the Committee and any delay will in no way affect the dates of vesting or forfeiture of the Grant.

11. Amendments; Integrated Agreement. This Agreement may only be amended in a writing signed by You and an officer of the Company duly authorized to do so. This Agreement contains the entire agreement of the parties relating to the subject matter of this Agreement and supersedes and replaces all prior agreements and understandings with respect to such subject matter, and the parties have made no agreements, representations or warranties relating to the subject matter of this Agreement which are not set forth herein.

12. Relation to Plan; Interpretation. The Grant is granted under the Plan, and the Grant and this Agreement are each subject to the terms and conditions of the Plan, which is incorporated in this Agreement by reference. In the event of any inconsistent provisions between this Agreement and the Plan, the provisions of the Plan control. References to Sections are to Sections of this Agreement unless otherwise noted. The titles to Sections of this Agreement are intended solely for convenience and no provision of this Agreement is to be construed by reference to the title of any Section.

13. Notices. Any notice hereunder by You will be given to the Senior Vice President Human Resources and the Corporate Secretary in writing and such notice and any payment by You will be deemed duly given or made only upon receipt by the Corporate Secretary at Barnes Group Inc., 123 Main Street, Bristol, Connecticut 06010, U.S.A., or at such other address as the Company may designate by notice to You. Any notice to You will be in writing and will be deemed duly given if delivered to You in person or mailed or otherwise delivered to You at such address as You may have on file with the Company from time to time.

14. Interpretation and Disputes. This Agreement will be interpreted and construed, and all determinations will be made, by the Committee, and any such interpretation, construction or determination will be final, binding and conclusive on the Company and You. In the event there is any inconsistency between the provisions of this Agreement and the Plan, the provisions of the Plan will govern.

Any claim, demand or controversy arising from such interpretation, construction or determination by the Committee shall be submitted first to a mediator in accordance with the rules of the American Arbitration Association ("AAA") by submitting a mediation request to the Administrator within 30 days of the date of the Committee's interpretation or construction. The mediation process shall conclude upon the earlier of: (a) the resolution of the dispute; (b) a determination by either the mediator or one or more of the parties that all settlement possibilities have been exhausted and there is no possibility of resolution; or (c) 30 days have passed since the filing of a request to mediate with the AAA. A party who has previously submitted a dispute to mediation, and which dispute has not been resolved, may submit such dispute to binding arbitration pursuant to the rules of the AAA. Any arbitration proceeding for such dispute must be initiated within 14 days from the date that the mediation process has concluded. The prevailing party shall recover its costs and reasonable attorney's fees incurred in such arbitration proceeding. You and the Company specifically understand and agree that the failure of a party to timely initiate a proceeding hereunder shall bar the party from any relief or other proceeding and any such dispute shall be deemed to have been finally and completely resolved. All mediation and arbitration proceedings shall be conducted in Bristol, Connecticut or such other location as the Company may determine and You agree that no objection shall be made to such jurisdiction or venue, as a forum non conveniens or otherwise. The arbitrator's authority shall be limited to resolution of the legal disputes between the parties and the arbitrator shall not have authority to modify or amend this Agreement or the Committee's interpretation or construction thereof, or abridge or enlarge rights available under applicable law. Any court with jurisdiction over the parties may enforce any award made hereunder.

15. General.

(a) Nothing in this Agreement confers upon You any right to continue in the employ or other service of the Company or any Subsidiary, or limit in any manner the right of the Company, its stockholders or any Subsidiary to terminate Your employment or adjust Your compensation.

(b) You have no rights as a stockholder with respect to any shares that may be issued pursuant to this Agreement until the date of issuance to You of a stock certificate for such shares or the date of a credit for such shares in a brokerage account in Your name.

(c) This Agreement is binding upon the successors and assigns of the Company and upon Your Beneficiary, estate, legal representatives, legatees and heirs.

(d) This Agreement is governed by and construed in accordance with the laws of the State of Delaware, without regard to the principles of conflicts of laws thereof.

(e) If applicable, any shares that may be earned pursuant to this Agreement are intended to qualify as "performance-based compensation" within the meaning of Section 162(m)(4)(C) of the Code. Any provision of this Agreement that would prevent any such shares from so qualifying will be administered, interpreted and construed to carry out such intention, and any provision that cannot be so administered, interpreted and construed will to that extent be disregarded.

EXHIBIT 31.1

CERTIFICATION

I, Patrick J. Dempsey, certify that:

1. I have reviewed this quarterly report on Form 10-Q for the period ended March 31, 2020 of Barnes Group Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: April 27, 2020

/s/ PATRICK J. DEMPSEY

Patrick J. Dempsey

President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION

I, Christopher J. Stephens, Jr., certify that:

1. I have reviewed this quarterly report on Form 10-Q for the period ended March 31, 2020 of Barnes Group Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: April 27, 2020

/s/ CHRISTOPHER J. STEPHENS, JR.

Christopher J. Stephens, Jr.

Chief Financial Officer

EXHIBIT 32

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350 AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Barnes Group Inc. (the "Company") on Form 10-Q for the period ended March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 that:

1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

/s/ PATRICK J. DEMPSEY	/s/ CHRISTOPHER J. STEPHENS, JR.
Patrick J. Dempsey **President and Chief Executive Officer** **April 27, 2020**	**Christopher J. Stephens, Jr.** **Chief Financial Officer** **April 27, 2020**

A signed original of this written statement required by Section 906 or other document authenticating, acknowledging, or otherwise adopting the signature that appears in the typed form within the electronic version of this written statement required by Section 906, has been provided to Barnes Group Inc. and will be retained by Barnes Group Inc. and furnished to the Securities and Exchange Commission or its staff upon request.