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 1-5828

CARPENTER TECHNOLOGY CORPORATION
(Exact name of Registrant as specified in its Charter)

Delaware	**23-0458500**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

1735 Market Street	**15th Floor**	**19103**
Philadelphia	**Pennsylvania**	
(Address of principal executive offices)		(Zip Code)

610-208-2000
(Registrant’s telephone number, including area code)

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

Common Stock, $5 Par Value	**CRS**	**New York Stock Exchange**
Title of each class	Trading Symbol	Name of each exchange on which registered

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

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

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

Large accelerated filer	☒		Accelerated filer	☐
Non-accelerated filer	☐	(Do not check if a smaller reporting company)	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 Exchange Act). Yes ☐ No ☒

The number of shares outstanding of the issuer’s common stock as of April 23, 2020 was 47,805,050.

CARPENTER TECHNOLOGY CORPORATION
FORM 10-Q
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PART I - FINANCIAL INFORMATION
Item 1. Financial Statements

CARPENTER TECHNOLOGY CORPORATION
CONSOLIDATED BALANCE SHEETS
(Unaudited)

($ in millions, except share data)	March 31, 2020	June 30, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 93.0	$ 27.0
Accounts receivable, net	374.4	384.1
Inventories	869.0	787.7
Other current assets	40.7	37.4
Total current assets	1,377.1	1,236.2
Property, plant and equipment, net	1,395.2	1,366.2
Goodwill	325.1	326.4
Other intangibles, net	61.2	67.2
Deferred income taxes	3.8	4.2
Other assets	267.0	187.6
Total assets	$ 3,429.4	$ 3,187.8
LIABILITIES		
Current liabilities:		
Short-term credit agreement borrowings	$ 170.0	$ 19.7
Accounts payable	209.6	238.7
Accrued liabilities	136.4	157.6
Total current liabilities	516.0	416.0
Long-term debt	552.4	550.6
Accrued pension liabilities	359.7	371.2
Accrued postretirement benefits	122.8	122.1
Deferred income taxes	151.5	142.7
Other liabilities	108.5	65.1
Total liabilities	1,810.9	1,667.7
Contingencies and commitments (see Note 11)		
STOCKHOLDERS' EQUITY		
Common stock — authorized 100,000,000 shares; issued 56,012,748 shares at March 31, 2020 and 55,808,743 shares at June 30, 2019; outstanding 47,804,334 shares at March 31, 2020 and 47,470,363 shares at June 30, 2019	280.1	279.0
Capital in excess of par value	325.7	320.4
Reinvested earnings	1,696.1	1,605.3
Common stock in treasury (8,208,414 shares and 8,338,380 shares at March 31, 2020 and June 30, 2019, respectively), at cost	(328.1)	(332.8)
Accumulated other comprehensive loss	(355.3)	(351.8)
Total stockholders' equity	1,618.5	1,520.1
Total liabilities and stockholders' equity	$ 3,429.4	$ 3,187.8

See accompanying notes to consolidated financial statements.

CARPENTER TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF INCOME
(Unaudited)

(in millions, except per share data)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019	Nine Months Ended March 31, 2020	Nine Months Ended March 31, 2019
Net sales	$ 585.4	$ 609.9	$ 1,743.8	$ 1,738.8
Cost of sales	475.9	486.7	1,409.0	1,416.9
Gross profit	109.5	123.2	334.8	321.9
Selling, general and administrative expenses	50.8	50.0	159.0	148.3
Restructuring charges	—	—	2.3	—
Operating income	58.7	73.2	173.5	173.6
Interest expense	(4.9)	(7.1)	(15.6)	(20.3)
Other (expense) income, net	(3.9)	1.9	(3.4)	0.1
Income before income taxes	49.9	68.0	154.5	153.4
Income tax expense	10.0	16.9	34.6	35.3
Net income	$ 39.9	$ 51.1	$ 119.9	$ 118.1
EARNINGS PER COMMON SHARE:				
Basic	$ 0.82	$ 1.06	$ 2.47	$ 2.45
Diluted	$ 0.82	$ 1.05	$ 2.46	$ 2.43
WEIGHTED AVERAGE COMMON SHARES OUTSTANDING:				
Basic	48.1	47.7	48.0	47.7
Diluted	48.3	48.1	48.4	48.1

See accompanying notes to consolidated financial statements.

CARPENTER TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)

	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
Net income	$ 39.9	$ 51.1	$ 119.9	$ 118.1
Other comprehensive (loss) income, net of tax				
Cumulative adjustment upon adoption of ASU 2017-12 reclassified to reinvested earnings	—	—	—	(1.0)
Pension and postretirement benefits, net of tax of $(0.9), $(0.5), $(3.1) and $(1.5), respectively	3.1	1.7	9.1	5.1
Net (loss) gain on derivative instruments, net of tax of $2.8, $(1.0), $0.4 and $12.5, respectively	(8.9)	3.2	(1.3)	(35.2)
Marketable securities gain, net of tax of $0.0, $0.0, $0.0 and $0.0, respectively	—	—	—	0.3
Foreign currency translation (loss) gain	(13.2)	1.1	(11.3)	(0.9)
Other comprehensive (loss) income, net of tax	(19.0)	6.0	(3.5)	(31.7)
Comprehensive income	$ 20.9	$ 57.1	$ 116.4	$ 86.4

See accompanying notes to consolidated financial statements.

CARPENTER TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

($ in millions)	Nine Months Ended March 31, 2020	Nine Months Ended March 31, 2019
OPERATING ACTIVITIES		
Net income	$ 119.9	$ 118.1
Adjustments to reconcile net income to net cash provided from operating activities:		
Depreciation and amortization	92.2	90.9
Non-cash restructuring charges	1.5	—
Deferred income taxes	7.0	7.0
Net pension expense	11.5	8.7
Share-based compensation expense	12.4	12.7
Net loss on disposals of property, plant and equipment and assets held for sale	—	0.7
Gain on insurance recovery	—	(11.4)
Changes in working capital and other:		
Accounts receivable	7.6	(12.1)
Inventories	(85.2)	(168.3)
Other current assets	(5.2)	7.6
Accounts payable	(26.9)	36.6
Accrued liabilities	(33.4)	(25.2)
Pension plan contributions	(4.9)	(4.3)
Other postretirement plan contributions	(2.7)	(2.5)
Other, net	1.1	(1.3)
Net cash provided from operating activities	94.9	57.2
INVESTING ACTIVITIES		
Purchases of property, plant, equipment and software	(144.0)	(130.7)
Proceeds from disposals of property, plant and equipment and assets held for sale	0.3	0.3
Proceeds from insurance recovery	—	11.4
Acquisition of business, net of cash acquired	—	(79.0)
Proceeds from sales and maturities of marketable securities	—	2.9
Net cash used for investing activities	(143.7)	(195.1)
FINANCING ACTIVITIES		
Credit agreement borrowings	331.1	163.9
Credit agreement repayments	(181.1)	(63.9)
Net change in short-term credit agreement borrowings	0.3	27.0
Dividends paid	(29.1)	(28.9)
Proceeds from stock options exercised	4.3	3.7
Withholding tax payments on share-based compensation awards	(7.8)	(4.4)
Net cash provided from financing activities	117.7	97.4
Effect of exchange rate changes on cash and cash equivalents	(2.9)	3.2
INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	66.0	(37.3)
Cash and cash equivalents at beginning of period	27.0	56.2
Cash and cash equivalents at end of period	$ 93.0	$ 18.9
SUPPLEMENTAL CASH FLOW INFORMATION:		
Non-cash investing activities:		
Acquisition of property, plant, equipment and software	$ 14.1	$ 12.8

See accompanying notes to consolidated financial statements.

CARPENTER TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
FOR THE THREE AND NINE MONTHS ENDED MARCH 31, 2020 AND 2019
(Unaudited)

	Common Stock					
($ in millions, except per share data)	Par Value of $5	Capital in Excess of Par Value	Reinvested Earnings	Common Stock in Treasury	Accumulated Other Comprehensive (Loss) Income	Total Equity
Balances at December 31, 2019	**$ 280.1**	**$ 322.1**	**$ 1,665.9**	**$ (328.4)**	**$ (336.3)**	**$ 1,603.4**
Net income			39.9			39.9
Pension and postretirement benefits gain, net of tax					3.1	3.1
Net loss on derivative instruments, net of tax					(8.9)	(8.9)
Foreign currency translation					(13.2)	(13.2)
Cash Dividends:						
Common @ $0.20 per share			(9.7)			(9.7)
Share-based compensation plans		3.6		0.3		3.9
Stock options exercised						—
Balances at March 31, 2020	**$ 280.1**	**$ 325.7**	**$ 1,696.1**	**$ (328.1)**	**$ (355.3)**	**$ 1,618.5**

	Common Stock					
($ in millions, except per share data)	Par Value of $5	Capital in Excess of Par Value	Reinvested Earnings	Common Stock in Treasury	Accumulated Other Comprehensive (Loss) Income	Total Equity
Balances at December 31, 2018	**$ 279.0**	**$ 315.0**	**$ 1,524.6**	**$ (335.6)**	**$ (277.5)**	**$ 1,505.5**
Net income			51.1			51.1
Pension and postretirement benefits gain, net of tax					1.7	1.7
Net gain on derivative instruments, net of tax					3.2	3.2
Foreign currency translation					1.1	1.1
Cash Dividends:						
Common @ $0.20 per share			(9.6)			(9.6)
Share-based compensation plans		4.6				4.6
Stock options exercised						—
Balances at March 31, 2019	**$ 279.0**	**$ 319.6**	**$ 1,566.1**	**$ (335.6)**	**$ (271.5)**	**$ 1,557.6**

See accompanying notes to consolidated financial statements.

CARPENTER TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
FOR THE THREE AND NINE MONTHS ENDED MARCH 31, 2020 AND 2019
(Unaudited)

	Common Stock					
($ in millions, except per share data)	Par Value of $5	Capital in Excess of Par Value	Reinvested Earnings	Common Stock in Treasury	Accumulated Other Comprehensive (Loss) Income	Total Equity
Balances at June 30, 2019	**$ 279.0**	**$ 320.4**	**$ 1,605.3**	**$ (332.8)**	**$ (351.8)**	**$ 1,520.1**
Net income			119.9			119.9
Pension and postretirement benefits gain, net of tax					9.1	9.1
Net loss on derivative instruments, net of tax					(1.3)	(1.3)
Foreign currency translation					(11.3)	(11.3)
Cash Dividends:						
Common @ $0.60 per share			(29.1)			(29.1)
Share-based compensation plans	0.5	1.6		4.7		6.8
Stock options exercised	0.6	3.7				4.3
Balances at March 31, 2020	**$ 280.1**	**$ 325.7**	**$ 1,696.1**	**$ (328.1)**	**$ (355.3)**	**$ 1,618.5**

	Common Stock					
($ in millions, except per share data)	Par Value of $5	Capital in Excess of Par Value	Reinvested Earnings	Common Stock in Treasury	Accumulated Other Comprehensive (Loss) Income	Total Equity
Balances at June 30, 2018	**$ 278.6**	**$ 310.0**	**$ 1,475.9**	**$ (338.8)**	**$ (239.8)**	**$ 1,485.9**
Cumulative adjustment upon adoption of ASU 2017-12			1.0		(1.0)	—
Net income			118.1			118.1
Pension and postretirement benefits gain, net of tax					5.1	5.1
Net loss on derivative instruments, net of tax					(35.2)	(35.2)
Marketable securities gain, net of tax					0.3	0.3
Foreign currency translation					(0.9)	(0.9)
Cash Dividends:						
Common @ $0.60 per share			(28.9)			(28.9)
Share-based compensation plans		6.3		3.2		9.5
Stock options exercised	0.4	3.3				3.7
Balances at March 31, 2019	**$ 279.0**	**$ 319.6**	**$ 1,566.1**	**$ (335.6)**	**$ (271.5)**	**$ 1,557.6**

See accompanying notes to consolidated financial statements.

CARPENTER TECHNOLOGY CORPORATION
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Basis of Presentation

The accompanying unaudited consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America for interim financial information and the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by accounting principles generally accepted in the United States of America for complete financial statements. In the opinion of management, all adjustments, consisting of normal and recurring adjustments, considered necessary for a fair statement of the results are reflected in the interim periods presented. The June 30, 2019 consolidated balance sheet data was derived from audited financial statements, but does not include all of the disclosures required by accounting principles generally accepted in the United States of America. These unaudited consolidated financial statements should be read in conjunction with the consolidated financial statements and footnotes thereto included in Carpenter Technology's Annual Report on Form 10-K for the fiscal year ended June 30, 2019 (the "2019 Form 10-K"). Operating results for the three and nine months ended March 31, 2020 are not necessarily indicative of the operating results for any future period.

As used throughout this report, unless the context requires otherwise, the terms "Carpenter", "Carpenter Technology", the "Company", "Registrant", "Issuer", "we" and "our" refer to Carpenter Technology Corporation.

2. Restructuring Charges

Restructuring charges for the three and nine months ended March 31, 2020 were $0.0 million and $2.3 million, respectively, before taxes. During the quarter ended December 31, 2019, the Company approved restructuring actions to reduce overhead costs and position the Company to drive long-term, profitable growth. The activities undertaken in connection with the restructuring were substantially complete in the quarter ended December 31, 2019.

3. Recent Accounting Pronouncements

Recently Issued Accounting Pronouncements - Adopted in current fiscal year

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-02 Leases (Topic 842) which replaces the existing guidance in ASC 840, Leases. The standard improves transparency and comparability among companies by recognizing lease assets and lease liabilities on the balance sheet and by disclosing key information about leasing arrangements. ASU 2016-02 is effective for public business entities for annual periods, including interim periods within those annual periods, beginning after December 15, 2018, with early adoption permitted. The Company adopted the provisions of ASU 2016-02 in the first quarter of fiscal year 2020 using the modified retrospective transition method, which did not require the Company to adjust comparative periods. Operating leases are included in other assets, accrued liabilities (current) and other liabilities (long-term) on the consolidated balance sheets. The Company's right-of-use ("ROU") assets and lease liabilities are recognized on the lease commencement date in an amount that represents the present value of future lease payments. Upon adoption of the new lease guidance, the Company recorded a ROU asset and lease liability on the consolidated balance sheet for several types of operating leases, including land and buildings, equipment (e.g. trucks and forklifts), vehicles and computer equipment. The adoption of the standard had no impact on the Consolidated Statements of Income or the Consolidated Statements of Cash Flows. There was no cumulative effect of adopting the standard at the date of initial application in reinvested earnings.

The Company elected the package of practical expedients included in this guidance, which allowed it to not reassess: (i) whether any expired or existing contracts contain leases; (ii) the lease classification for any expired or existing leases; and, (iii) the initial direct costs for existing leases. The Company has elected the practical expedient to not separate lease components from nonlease components for all asset classes. The Company will recognize lease expense in the consolidated statements of operations on a straight-line basis over the lease term. The Company also made a policy election to not recognize ROU assets and lease liabilities for short-term leases with an initial term of 12 months or less for all asset classes. Leases with the option to extend their term or terminate early are reflected in the lease term when it is reasonably certain that the Company will exercise such options. The Company has expanded the disclosure of operating leases included in Note 12.

In February 2018, the FASB issued ASU 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220) - Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, which allows a reclassification from accumulated other comprehensive income (loss) to reinvested earnings for standard tax effects resulting from the Act to Provide for Reconciliation Pursuant to Titles II and V of the Concurrent Resolution on the Budget for Fiscal Year 2018 (the “Tax Cuts and Jobs Act”). ASU 2018-02 is effective for public business entities for annual periods, including interim periods within those annual periods, beginning after December 15, 2018, with early adoption permitted. The Company adopted the provisions of ASU 2018-02 in the first quarter of fiscal year 2020. The adoption of ASU 2018-02 did not materially impact the consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, Intangibles - Goodwill and Other - Internal Use Software (Subtopic 350-40) - Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract, to help entities evaluate the accounting for fees paid by a customer in a cloud computing arrangement. ASU 2018-15 is effective for public business entities for annual periods, including interim periods within those annual periods, beginning after December 15, 2019, with early adoption permitted. The Company early adopted the provisions of ASU 2018-15 in the first quarter of fiscal year 2020 and elected the prospective adoption method. The adoption of ASU 2018-15 did not materially impact the consolidated financial statements.

Recently Issued Accounting Pronouncements - Pending Adoption

At this time there are no issued pronouncements pending adoption that would materially impact the Company.

4. Revenue

The Company recognizes revenue in accordance with Topic 606, Revenue from Contracts. The Company applies the five-step model in the FASB’s guidance, which requires the Company to: (i) identify the contract with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when, or as, the Company satisfies a performance obligation.

The Company recognizes revenue when performance obligations under the terms of a customer purchase order or contract are satisfied. This occurs when control of the goods and services has transferred to the customer, which is generally determined when title, ownership, and risk of loss pass to the customer, all of which occurs upon shipment or delivery of the product or the service is performed. Consignment transactions are arrangements where the Company transfers product to a customer location but retains ownership and control of such product until it is used by the customer. Revenue for consignment arrangements is recognized upon usage by the customer. Service revenue is recognized as the services are performed.

Each customer purchase order or contract for goods transferred has a single performance obligation for which revenue is recognized at a point in time. The standard terms and conditions of a customer purchase order include general rights of return and product warranty provisions related to nonconforming product. Depending on the circumstances, the product is either replaced or a quality adjustment is issued. Such warranties do not represent a separate performance obligation.

Each customer purchase order or contract sets forth the transaction price for the products and services purchased under that arrangement. Some customer arrangements include variable consideration, such as volume rebates, which generally depend upon the Company’s customers meeting specified performance criteria, such as a purchasing level over a period of time. The Company exercises judgment to estimate the most likely amount of variable consideration at each reporting date.

Revenue is measured as the amount of consideration the Company expects to receive in exchange for its product. The standard payment terms are 30 days. The Company has elected to use the practical expedient that permits a Company to not adjust for the effects of a significant financing component if it expects that at the contract inception, the period between when the Company transfers a promised good or service to a customer and when the customer pays for that good or service will be one year or less.

Amounts billed to customers for shipping and handling activities to fulfill the Company’s promise to transfer the goods are included in revenues and costs incurred by the Company for the delivery of goods and are classified as cost of sales in the consolidated statements of income. Shipping terms may vary for products shipped outside the United States depending on the mode of transportation, the country where the material is shipped and any agreements made with the customers.

Contract liabilities are recognized when the Company has received consideration from a customer to transfer goods or services at a future point in time when the Company performs under the purchase order or contract. Contract liabilities were $11.0 million and $10.5 million at March 31, 2020 and June 30, 2019, respectively, and are included in accrued liabilities on the consolidated balance sheets.

The Company has elected to use the practical expedient that permits the omission of disclosure for remaining performance obligations which are expected to be satisfied in one year or less.

Disaggregation of Revenue

The Company operates in two business segments, Specialty Alloys Operations (“SAO”) and Performance Engineered Products (“PEP”). Revenue is disaggregated within these two business segments by diversified end-use markets and by geographical location. Comparative information of the Company’s overall revenues by end-use markets and geography for the three and nine months ended March 31, 2020 and 2019 were as follows:

End-Use Market Data	**Three Months Ended March 31,**		**Nine Months Ended March 31,**	
($ in millions)	**2020**	**2019**	**2020**	**2019**
Aerospace and Defense	$ 356.4	$ 342.1	$ 1,058.4	$ 951.9
Medical	53.0	55.1	151.0	147.6
Transportation	33.5	39.9	111.9	118.0
Energy	32.7	49.0	103.2	136.1
Industrial and Consumer	80.1	87.4	231.4	280.9
Distribution	29.7	36.4	87.9	104.3
Consolidated net sales	$ 585.4	$ 609.9	$ 1,743.8	$ 1,738.8

Geographic Data	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
United States	$ 367.7	$ 414.1	$ 1,123.6	$ 1,183.3
Europe	109.5	97.7	304.7	270.9
Asia Pacific	62.6	47.1	183.7	139.4
Mexico	17.8	22.7	55.3	65.4
Canada	15.1	17.5	44.4	50.2
Other	12.7	10.8	32.1	29.6
Consolidated net sales	$ 585.4	$ 609.9	$ 1,743.8	$ 1,738.8

5. Acquisitions

On October 22, 2018, the Company acquired all the outstanding shares of LPW Technology Ltd. ("LPW"), for a cash purchase price of $79.0 million, net of cash acquired. The acquisition combines LPW's metal powder lifecycle management technology and processes with the Company's technical expertise in producing highly engineered metal powders and additively manufactured components. The purchase price allocation was completed in the fourth quarter of fiscal year 2019 and resulted in the purchase price being allocated to: $2.1 million of accounts receivable, $4.5 million of inventory, $0.5 million of other current assets, $11.9 million of property, plant and equipment, $11.4 million of identifiable intangible assets, $59.0 million of goodwill, $4.4 million of accounts payable, $2.5 million of current liabilities and $3.5 million of other liabilities.

6. Earnings per Common Share

The Company calculates basic and diluted earnings per share using the two class method. Under the two class method, earnings are allocated to common stock and participating securities (non-vested restricted shares and units that receive non-forfeitable dividends) according to their participation rights in dividends and undistributed earnings. The earnings available to each class of stock are divided by the weighted average number of outstanding shares for the period in each class. Diluted earnings per share assumes the issuance of common stock for all potentially dilutive share equivalents outstanding.

CARPENTER TECHNOLOGY CORPORATION
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

The calculations of basic and diluted earnings per common share for the three and nine months ended March 31, 2020 and 2019 were as follows:

	Three Months Ended March 31,		Nine Months Ended March 31,	
(in millions, except per share data)	**2020**	**2019**	**2020**	**2019**
Net income	$ 39.9	$ 51.1	$ 119.9	$ 118.1
Less: earnings and dividends allocated to participating securities	(0.4)	(0.6)	(1.1)	(1.4)
Earnings available for common stockholders used in calculation of basic earnings per common share	$ 39.5	$ 50.5	$ 118.8	$ 116.7
Weighted average number of common shares outstanding, basic	48.1	47.7	48.0	47.7
Basic earnings per common share	$ 0.82	$ 1.06	$ 2.47	$ 2.45
Net income	$ 39.9	$ 51.1	$ 119.9	$ 118.1
Less: earnings and dividends allocated to participating securities	(0.4)	(0.6)	(1.1)	(1.4)
Earnings available for common stockholders used in calculation of diluted earnings per common share	$ 39.5	$ 50.5	$ 118.8	$ 116.7
Weighted average number of common shares outstanding, basic	48.1	47.7	48.0	47.7
Effect of shares issuable under share-based compensation plans	0.2	0.4	0.4	0.4
Weighted average number of common shares outstanding, diluted	48.3	48.1	48.4	48.1
Diluted earnings per common share	$ 0.82	$ 1.05	$ 2.46	$ 2.43

The following awards issued under share-based compensation plans were excluded from the above calculations of diluted earnings per share because their effects were anti-dilutive:

	Three Months Ended March 31,		Nine Months Ended March 31,	
(in millions)	**2020**	**2019**	**2020**	**2019**
Stock options	2.0	0.8	0.9	0.7

7. Inventories

Inventories consisted of the following components as of March 31, 2020 and June 30, 2019:

($ in millions)	March 31, 2020	June 30, 2019
Raw materials and supplies	$ 238.6	$ 169.8
Work in process	436.1	425.7
Finished and purchased products	194.3	192.2
Total inventories	$ 869.0	$ 787.7

Inventories are valued at the lower of cost or market. Cost for inventories is principally determined using the last-in, first-out (“LIFO”) inventory costing method. The Company also uses the first-in, first-out (“FIFO”) and average cost methods. As of March 31, 2020 and June 30, 2019, $165.9 million and $173.2 million of inventory, respectively, was accounted for using a method other than the LIFO inventory costing method.

8. Accrued Liabilities

Accrued liabilities consisted of the following as of March 31, 2020 and June 30, 2019:

($ in millions)	March 31, 2020	June 30, 2019
Accrued compensation and benefits	$ 44.1	$ 71.2
Accrued postretirement benefits	14.7	14.7
Derivative financial instruments	14.5	16.7
Current portion of lease liabilities	11.7	—
Contract liabilities	11.0	10.5
Accrued interest expense	3.9	10.4
Accrued pension liabilities	3.4	3.4
Accrued income taxes	2.5	4.2
Other	30.6	26.5
Total accrued liabilities	$ 136.4	$ 157.6

9. Pension and Other Postretirement Benefits

The components of the net periodic benefit cost related to the Company's pension and other postretirement benefits for the three and nine months ended March 31, 2020 and 2019 were as follows:

Three months ended March 31,	Pension Plans		Other Postretirement Plans	
($ in millions)	2020	2019	2020	2019
Service cost	$ 2.4	$ 2.3	$ 0.7	$ 0.6
Interest cost	11.7	13.2	2.3	2.5
Expected return on plan assets	(15.5)	(16.2)	(1.8)	(1.7)
Amortization of net loss	3.9	2.6	0.6	0.4
Amortization of prior service cost (benefit)	0.5	0.5	(1.0)	(1.3)
Net pension expense	$ 3.0	$ 2.4	$ 0.8	$ 0.5

Nine months ended March 31,	Pension Plans		Other Postretirement Plans	
($ in millions)	2020	2019	2020	2019
Service cost	$ 7.3	$ 6.9	$ 2.0	$ 1.8
Interest cost	35.1	39.6	6.8	7.6
Expected return on plan assets	(46.6)	(48.6)	(5.3)	(5.2)
Amortization of net loss	11.6	7.8	1.9	1.2
Amortization of prior service cost (benefit)	1.6	1.5	(2.9)	(3.9)
Net pension expense	$ 9.0	$ 7.2	$ 2.5	$ 1.5

During the nine months ended March 31, 2020 and 2019, the Company made $4.9 million and $4.3 million, respectively, of contributions to its qualified defined benefit pension plans. The Company currently expects to contribute $1.3 million to its qualified defined benefit pension plans during the remainder of fiscal year 2020.

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10. Debt

The Company maintains a $400.0 million unsecured revolving credit facility ("Credit Agreement") that extends to March 2022. Interest on the borrowings under the Credit Agreement accrue at variable rates, based upon LIBOR or a defined "Base Rate". Both are determined based upon the credit rating of the Company's senior unsecured long-term debt (the "Debt Rating"). The applicable margin to be added to LIBOR ranges from 1.00% to 1.75% (1.25% as of March 31, 2020), and for Base Rate-determined loans, from 0.00% to 0.75% (0.25% as of March 31, 2020). The Company also pays a quarterly commitment fee ranging from 0.125% to 0.400% (0.20% as of March 31, 2020), determined based upon the Debt Rating, of the unused portion of the $400.0 million commitment under the Credit Agreement. In addition, the Company must pay certain letter of credit fees, ranging from 1.00% to 1.75% (1.25% as of March 31, 2020), with respect to letters of credit issued under the Credit Agreement. The Company has the right to voluntarily prepay and re-borrow loans and to terminate or reduce the commitments under the facility. As of March 31, 2020, the Company had $5.9 million of issued letters of credit and $170.0 million of short-term borrowings under the Credit Agreement with the balance of $224.1 million available to the Company. As of March 31, 2020, the borrowing rate for the Credit Agreement was 2.49%.

The Company is subject to certain financial and restrictive covenants under the Credit Agreement, which, among other things, require the maintenance of a minimum interest coverage ratio of 3.50 to 1.00. The interest coverage ratio is defined in the Credit Agreement as, for any period, the ratio of consolidated earnings before interest, taxes, depreciation and amortization and non-cash net pension expense ("EBITDA") to consolidated interest expense for such period. The Credit Agreement also requires the Company to maintain a debt to capital ratio of less than 55 percent. The debt to capital ratio is defined in the Credit Agreement as the ratio of consolidated indebtedness, as defined therein, to consolidated capitalization, as defined therein. As of March 31, 2020 and June 30, 2019, the Company was in compliance with all of the covenants of the Credit Agreement.

Long-term debt outstanding as of March 31, 2020 and June 30, 2019 consisted of the following:

($ in millions)	March 31, 2020	June 30, 2019
Senior unsecured notes, 5.20% due July 2021 (face value of $250.0 million at March 31, 2020 and June 30, 2019)	$ 252.8	$ 251.2
Senior unsecured notes, 4.45% due March 2023 (face value of $300.0 million at March 31, 2020 and June 30, 2019)	299.6	299.4
Total	552.4	550.6
Less: amounts due within one year	—	—
Long-term debt, net of current portion	$ 552.4	$ 550.6

For the three months ended March 31, 2020 and 2019, interest costs totaled $7.2 million and $8.4 million, respectively, of which $2.3 million and $1.3 million, respectively, were capitalized as part of the cost of property, plant, equipment and software. For the nine months ended March 31, 2020 and 2019, interest costs totaled $22.1 million and $23.5 million, respectively, of which $6.5 million and $3.2 million, respectively, were capitalized as part of the cost of property, plant, equipment and software.

11. Contingencies and Commitments

Environmental

The Company is subject to various federal, state, local and international environmental laws and regulations relating to pollution, protection of public health and the environment, natural resource damages and occupational safety and health. Although compliance with these laws and regulations may affect the costs of the Company's operations, compliance costs to date have not been material. The Company has environmental remediation liabilities at some of its owned operating facilities and has been designated as a potentially responsible party ("PRP") with respect to certain third party Superfund waste-disposal sites and other third party-owned sites. The Company accrues amounts for environmental remediation costs that represent management's best estimate of the probable and reasonably estimable future costs related to environmental remediation. During the nine months ended March 31, 2020, the Company decreased the liability for a company-owned former operating site by $0.1 million. The liabilities recorded for environmental remediation costs at Superfund sites, other third party-owned sites and Carpenter-owned current or former operating facilities remaining at March 31, 2020 and June 30, 2019 were $16.0 million and $16.1 million, respectively. Additionally, the Company has been notified that it may be a PRP with respect to other Superfund sites as to which no proceedings have been instituted against the Company. Neither the exact amount of remediation costs nor the final method of their allocation among all designated PRPs at these Superfund sites have been determined. Accordingly, at this time, the Company cannot reasonably estimate expected costs for such matters. The liability for future environmental remediation costs that can be reasonably estimated is evaluated by management on a quarterly basis.

Estimates of the amount and timing of future costs of environmental remediation requirements are inherently imprecise because of the continuing evolution of environmental laws and regulatory requirements, the availability and application of technology, the identification of currently unknown remediation sites and the allocation of costs among the PRPs. Based upon information currently available, such future costs are not expected to have a material effect on the Company's financial position, results of operations or cash flows over the long-term. However, such costs could be material to the Company's financial position, results of operations or cash flows in a particular future quarter or year.

Other

The Company is defending various routine claims and legal actions that are incidental to its business and common to its operations, including those pertaining to product claims, commercial disputes, patent infringement, employment actions, employee benefits, compliance with domestic and foreign laws, personal injury claims and tax issues. Like many other manufacturing companies in recent years, the Company, from time to time, has been named as a defendant in lawsuits alleging personal injury as a result of exposure to chemicals and substances in the workplace such as asbestos. The Company provides for costs relating to these matters when a loss is probable and the amount of the loss is reasonably estimable. The effect of the outcome of these matters on the Company's future results of operations and liquidity cannot be predicted because any such effect depends on future results of operations and the amount and timing (both as to recording future charges to operations and cash expenditures) of the resolution of such matters. While it is not feasible to determine the outcome of these matters, management believes that the total liability from these matters will not have a material effect on the Company's financial position, results of operations or cash flows over the long-term. However, there can be no assurance that an increase in the scope of pending matters or that any future lawsuits, claims, proceedings or investigations will not be material to the Company's financial position, results of operations or cash flows in a particular future quarter or year.

12. Leases

As a result of adoption of ASU 2016-02, Leases, the Company recorded ROU assets and operating lease liabilities, each in the amount of $53.8 million, on the consolidated balance sheet as of July 1, 2019 for several types of operating leases, including land and buildings, equipment (e.g. trucks and forklifts), vehicles, and computer equipment. These amounts are equivalent to the aggregate future lease payments on a discounted basis. The discount rate applied to these leases is the Company's incremental borrowing rate based on the information available at the commencement date in determining the present value of lease payments. Some leasing arrangements require variable payments that are dependent on usage, output, or may vary for other reasons, such as insurance and tax payments. The variable lease payments are not presented as part of the ROU asset or lease liability. The leases have remaining terms of one to seventeen years.

The following table sets forth the components of the Company's lease cost for the three and nine months ended March 31, 2020:

	Three Months Ended March 31,	Nine Months Ended March 31,
($ in millions)	2020	2020
Operating lease cost	$ 3.8	$ 10.8
Short-term lease cost	0.9	2.7
Variable lease cost	0.1	0.3
Total lease cost	$ 4.8	$ 13.8
Operating cash flow payments from operating leases	$ 3.9	$ 10.5
Non-cash ROU assets obtained in exchange for lease obligations	$ 5.2	$ 18.7
Weighted-average remaining lease term - operating leases	8.2 years	8.2 years
Weighted-average discount rate - operating leases	3.9%	3.9%

The following table sets forth the Company's ROU assets and lease liabilities at March 31, 2020:

($ in millions)	March 31, 2020
Operating lease assets:	
Other assets	$ 61.9
Operating lease liabilities:	
Other accrued liabilities	$ 11.7
Other liabilities	52.6
Total operating lease liabilities	$ 64.3

Minimum lease payments for operating leases expiring subsequent to March 31, 2020 are as follows:

($ in millions)	March 31, 2020
2020 (remaining period of fiscal year)	$ 3.7
2021	13.3
2022	11.5
2023	9.7
2024	7.8
Thereafter	30.5
Total future minimum lease payments	76.5
Less imputed interest	(12.2)
Total	$ 64.3

The below table as of June 30, 2019 is carried forward, including certain amounts that were historically included in the table as a result of the historical lease term conclusions but were not included in the initial ROU asset and lease liability measurement as of June 30, 2019. Minimum lease payments for operating leases under ASC 840 expiring subsequent to June 30, 2019 were as follows:

($ in millions)	June 30, 2019
2020	$ 12.7
2021	10.4
2022	8.3
2023	6.6
2024	5.0
Thereafter	23.5
Total future minimum lease payments	$ 66.5

13. Fair Value Measurements

The fair value hierarchy has three levels based on the inputs used to determine fair value. Level 1 refers to quoted prices in active markets for identical assets or liabilities. Level 2 refers to observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data. Level 3 refers to unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs. Currently, the Company does not use Level 1 and 3 inputs.

The following tables present the Company’s assets and liabilities that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy:

March 31, 2020 ($ in millions)	Fair Value Measurements Using Input Type Level 2
Assets:	
Derivative financial instruments	$ 6.7
Liabilities:	
Derivative financial instruments	$ 22.2

June 30, 2019 ($ in millions)	Fair Value Measurements Using Input Type Level 2
Assets:	
Derivative financial instruments	$ 12.5
Liabilities:	
Derivative financial instruments	$ 28.0

The Company's derivative financial instruments consist of commodity forward contracts, foreign currency forward contracts and interest rate swaps. These instruments are measured at fair value using the market method valuation technique. The inputs to this technique utilize information related to commodity prices, foreign exchange rates and interest rates published by third party leading financial news and data providers. This is observable data; however, the valuation of these instruments is not based on actual transactions for the same instruments and, as such, they are classified as Level 2. The Company's use of derivatives and hedging policies are more fully discussed in Note 14.

The Company has currently chosen not to elect the fair value option for any items that are not already required to be measured at fair value in accordance with accounting principles generally accepted in the United States of America.

The carrying amounts of other financial instruments not listed in the table below approximate fair value due to the short-term nature of these items. The carrying amounts and estimated fair values of the Company's financial instruments not recorded at fair value in the financial statements were as follows:

	March 31, 2020		June 30, 2019	
($ in millions)	Carrying Value	Fair Value	Carrying Value	Fair Value
Long-term debt	$ 552.4	$ 516.8	$ 550.6	$ 560.6
Company-owned life insurance	$ 16.4	$ 16.4	$ 17.9	$ 17.9

The fair values of long-term debt as of March 31, 2020 and June 30, 2019 were determined by using current interest rates for debt with terms and maturities similar to the Company's existing debt arrangements and accordingly would be classified as Level 2 inputs in the fair value hierarchy.

The carrying amount of Company-owned life insurance reflects cash surrender values based upon the market values of underlying securities, using Level 2 inputs, net of any outstanding policy loans. The carrying value associated with the cash surrender value of these policies is recorded in other assets in the accompanying consolidated balance sheets.

14. Derivatives and Hedging Activities

The Company uses commodity forwards, interest rate swaps, forward interest rate swaps and foreign currency forwards to manage risks generally associated with commodity price, interest rate and foreign currency rate fluctuations. The following explains the various types of derivatives and includes a summary of the impact the derivative instruments had on the Company's financial position, results of operations and cash flows.

Cash Flow Hedging — Commodity forward contracts: The Company enters into commodity forward contracts to fix the price of a portion of anticipated future purchases of certain critical raw materials and energy to manage the risk of cash flow variability associated with volatile commodity prices. The commodity forward contracts have been designated as cash flow hedges. The qualifying hedge contracts are marked-to-market at each reporting date and any unrealized gains or losses are included in accumulated other comprehensive (loss) income ("AOCI") and reclassified to cost of sales in the period during which the hedged transaction affects earnings or it becomes probable that the forecasted transaction will not occur. As of March 31, 2020, the Company had forward contracts to purchase 14.8 million pounds of certain raw materials with settlement dates through December 2023.

Cash Flow Hedging — Forward interest rate swaps: Historically, the Company has entered into forward interest rate swap contracts to manage the risk of cash flow variability associated with fixed interest debt expected to be issued. The forward interest rate swaps were designated as cash flow hedges. The qualifying hedge contracts were marked-to-market at each reporting date and any unrealized gains or losses were included in AOCI and reclassified to interest expense in the period during which the hedged transaction affected earnings or it became probable that the forecasted transaction would not occur. Upon the issuance of the fixed rate debt, the forward interest rate swap contracts were terminated. The realized gains at the time the interest rate swap contracts were terminated are being amortized over the term of the underlying debt. For the three months ended March 31, 2020 and 2019, net gains of $0.1 million and $0.1 million, respectively, related to the previously terminated contracts, were recorded as a reduction to interest expense. For the nine months ended March 31, 2020 and 2019, net gains of $0.3 million and $0.3 million, respectively, related to the previously terminated contracts were recorded as a reduction to interest expense.

Cash Flow Hedging — Foreign currency forward contracts: The Company uses foreign currency forward contracts to hedge a portion of anticipated future sales denominated in foreign currencies, principally the Euro and Pound Sterling, in order to offset the effect of changes in exchange rates. The qualifying hedge contracts are marked-to-market at each reporting date and any unrealized gains or losses are included in AOCI and reclassified to net sales in the period during which the transaction affects earnings or it becomes probable that the forecasted transaction will not occur.

The Company also uses foreign currency forward contracts to protect certain short-term positions denominated in foreign currencies against the effect of changes in exchange rates. These positions do not qualify for hedge accounting and accordingly are marked-to-market at each reporting date through charges to other income and expense. As of March 31, 2020 and June 30, 2019, the fair value of the outstanding foreign currency forwards not designated as hedging instruments and the charges to income for changes in fair value for these contracts were not material.

Fair Value Hedging - Interest rate swaps: The Company uses interest rate swaps to achieve a level of floating rate debt relative to fixed rate debt where appropriate. The Company has designated fixed to floating interest rate swaps as fair value hedges. Accordingly, the changes in the fair value of these instruments are immediately recorded in earnings. The mark-to-market values of both the fair value hedging instruments and the underlying debt obligations are recorded as equal and offsetting gains and losses in interest expense in the consolidated statements of income. As of March 31, 2020 and June 30, 2019, the total notional amount of floating interest rate contracts was $150.0 million for both periods. For the three months ended March 31, 2020 and 2019, net gains of $0.6 million were recorded as a decrease to interest expense and net losses of $0.2 million were recorded as an increase to interest expense, respectively. For the nine months ended March 31, 2020 and 2019, net gains of $0.7 million were recorded as a decrease to interest expense and net losses of $0.5 million were recorded as an increase to interest expense.

The fair value and location of outstanding derivative contracts recorded in the accompanying consolidated balance sheets were as follows as of March 31, 2020 and June 30, 2019:

March 31, 2020 ($ in millions)	Interest Rate Swaps	Foreign Currency Contracts	Commodity Contracts	Total Derivatives
Asset Derivatives:				
Derivatives designated as hedging instruments:				
Other current assets	$ 0.5	$ 0.9	$ 1.1	$ 2.5
Other assets	3.2	—	1.0	4.2
Total asset derivatives	$ 3.7	$ 0.9	$ 2.1	$ 6.7
Liability Derivatives:				
Derivatives designated as hedging instruments:				
Accrued liabilities	$ —	$ 0.7	$ 13.8	$ 14.5
Other liabilities	—	0.3	7.4	7.7
Total liability derivatives	$ —	$ 1.0	$ 21.2	$ 22.2

June 30, 2019 ($ in millions)	Interest Rate Swaps	Foreign Currency Contracts	Commodity Contracts	Total Derivatives
Asset Derivatives:				
Derivatives designated as hedging instruments:				
Other current assets	$ 0.3	$ 0.6	$ 3.8	$ 4.7
Other assets	1.6	0.2	6.0	7.8
Total asset derivatives	$ 1.9	$ 0.8	$ 9.8	$ 12.5
Liability Derivatives:				
Derivatives designated as hedging instruments:				
Accrued liabilities	$ —	$ —	$ 16.7	$ 16.7
Other liabilities	—	—	11.3	11.3
Total liability derivatives	$ —	$ —	$ 28.0	$ 28.0

Substantially all of the derivative contracts are subject to master netting arrangements, or similar agreements with each counterparty, which provide for the option to settle contracts on a net basis when they settle on the same day and in the same currency. In addition, these arrangements provide for a net settlement of all contracts with a given counterparty in the event that the arrangement is terminated due to the occurrence of default or a termination event. The Company presents the outstanding derivative contracts on a net basis by counterparty in the consolidated balance sheets. If the Company had chosen to present the derivative contracts on a gross basis, the total asset derivatives would have been $8.3 million and total liability derivatives would have been $23.8 million as of March 31, 2020.

According to the provisions of the Company's derivative arrangements, in the event that the fair value of outstanding derivative positions with certain counterparties exceeds certain thresholds, the Company may be required to issue cash collateral to the counterparties. As of March 31, 2020 and June 30, 2019, the Company had no cash collateral held by counterparties.

The Company is exposed to credit loss in the event of nonperformance by counterparties on its derivative instruments as well as credit or performance risk with respect to its customer commitments to perform. Although nonperformance is possible, the Company does not anticipate nonperformance by any of the parties. In addition, various master netting arrangements are in place with counterparties to facilitate settlements of gains and losses on these contracts.

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For derivative instruments that are designated and qualify as cash flow hedges, the gain or loss on the derivative is reported as a component of AOCI and reclassified into earnings in the same period or periods during which the hedged transactions affect earnings or it becomes probable the forecasted transactions will not occur. The following is a summary of the gains (losses) related to cash flow hedges recognized during the three and nine months ended March 31, 2020 and 2019:

	Amount of (Loss) Gain Recognized in AOCI on Derivatives			
	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	**2020**	**2019**	**2020**	**2019**
Derivatives in Cash Flow Hedging Relationship:				
Commodity contracts	$ (9.6)	$ 6.4	$ (8.3)	$ (47.2)
Foreign exchange contracts	0.3	0.2	(0.7)	0.8
Total	$ (9.3)	$ 6.6	$ (9.0)	$ (46.4)

		Amount of Gain Reclassified from AOCI into Income	
		Three Months Ended March 31,	
($ in millions)	**Location of Gain Reclassified from AOCI into Income**	**2020**	**2019**
Derivatives in Cash Flow Hedging Relationship:			
Commodity contracts	Cost of sales	$ 2.2	$ 2.1
Foreign exchange contracts	Net sales	0.1	0.2
Forward interest rate swaps	Interest expense	0.1	0.1
Total		$ 2.4	$ 2.4

		Amount of Gain Reclassified from AOCI into Income	
		Nine Months Ended March 31,	
($ in millions)	**Location of Gain Reclassified from AOCI into Income**	**2020**	**2019**
Derivatives in Cash Flow Hedging Relationship:			
Commodity contracts	Cost of sales	$ 9.7	$ 0.3
Foreign exchange contracts	Net sales	0.7	0.8
Forward interest rate swaps	Interest expense	0.3	0.3
Total		$ 10.7	$ 1.4

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The following is a summary of total amounts presented in the consolidated statements of income in which the effects of cash flow and fair value hedges are recorded during the three and nine months ended March 31, 2020 and 2019:

	Three Months Ended March 31, 2020			Three Months Ended March 31, 2019		
($ in millions)	Net Sales	Cost of Sales	Interest Expense	Net Sales	Cost of Sales	Interest Expense
Total amounts presented in the consolidated statement of income in which the effects of cash flow and fair value hedges are recorded	$ 585.4	$ 475.9	$ 4.9	$ 609.9	$ 486.7	$ 7.1
Gain on Derivatives in Cash Flow Hedging Relationship:						
Commodity contracts						
Amount of gain reclassified from AOCI to income	$ —	$ 2.2	$ —	$ —	$ 2.1	$ —
Foreign currency forward contracts						
Amount of gain reclassified from AOCI to income	0.1	—	—	0.2	—	—
Interest rate swap agreements						
Amount of gain reclassified from AOCI to income	—	—	0.1	—	—	0.1
Gain (Loss) on Derivatives in Fair Value Hedging Relationship:						
Interest rate swap agreements						
Hedged Item	—	—	(0.6)	—	—	0.2
Derivatives designated as hedging instruments	—	—	0.6	—	—	(0.2)
Total gain	$ 0.1	$ 2.2	$ 0.1	$ 0.2	$ 2.1	$ 0.1

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($ in millions)	Nine Months Ended March 31, 2020 Net Sales	Nine Months Ended March 31, 2020 Cost of Sales	Nine Months Ended March 31, 2020 Interest Expense	Nine Months Ended March 31, 2019 Net Sales	Nine Months Ended March 31, 2019 Cost of Sales	Nine Months Ended March 31, 2019 Interest Expense
Total amounts presented in the consolidated statement of income in which the effects of cash flow and fair value hedges are recorded	$ 1,743.8	$ 1,409	$ 15.6	$ 1,738.8	$ 1,416.9	$ 20.3
Gain on Derivatives in Cash Flow Hedging Relationship:						
Commodity contracts						
Amount of gain reclassified from AOCI to income	$ —	$ 9.7	$ —	$ —	$ 0.3	$ —
Foreign currency forward contracts						
Amount of gain reclassified from AOCI to income	0.7	—	—	0.8	—	—
Interest rate swap agreements						
Amount of gain reclassified from AOCI to income	—	—	0.3	—	—	0.3
Gain (Loss) on Derivatives in Fair Value Hedging Relationship:						
Interest rate swap agreements						
Hedged Item	—	—	(0.7)	—	—	0.5
Derivatives designated as hedging instruments	—	—	0.7	—	—	(0.5)
Total gain	$ 0.7	$ 9.7	$ 0.3	$ 0.8	$ 0.3	$ 0.3

The Company estimates that $8.8 million of net derivative gains included in AOCI as of March 31, 2020 will be reclassified into income within the next 12 months. No significant cash flow hedges were discontinued during the three and nine months ended March 31, 2020.

As of March 31, 2020, and June 30, 2019, the following amounts were recorded on the consolidated balance sheets related to cumulative basis adjustments for fair value hedges of interest rate risk:

($ in millions)	Carrying amount of the hedged liabilities March 31, 2020	Carrying amount of the hedged liabilities June 30, 2019	Cumulative amount of fair value hedging adjustment included in the carrying amount of the hedged liabilities March 31, 2020	Cumulative amount of fair value hedging adjustment included in the carrying amount of the hedged liabilities June 30, 2019
Line item in the consolidated balance sheets in which the hedged item is included				
Long Term Debt	$ 153.2	$ 151.6	$ 3.2	$ 1.6

15. Other (Expense) Income, Net

Other (expense) income, net consisted of the following:

	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
Unrealized (losses) gains on company-owned life insurance contracts and investments held in rabbi trusts	$ (3.9)	$ 2.0	$ (2.5)	$ 0.2
Foreign exchange gain (loss)	0.7	(0.2)	1.0	(0.1)
Pension earnings, interest and deferrals	(0.7)	—	(2.2)	(0.1)
Other	—	0.1	0.3	0.1
Total other (expense) income, net	$ (3.9)	$ 1.9	$ (3.4)	$ 0.1

16. Income Taxes

The effective tax rate used for interim periods is the estimated annual effective consolidated tax rate, based on the current estimate of full year results, except that taxes related to specific events, if any, are recorded in the interim period in which they occur. The annual effective tax rate is based upon a number of significant estimates and judgments, including the estimated annual pre-tax income of the Company in each tax jurisdiction in which it operates, and the development of tax planning strategies during the year. In addition, the Company’s tax expense can be impacted by changes in tax rates or laws, the finalization of tax audits, and other factors that cannot be predicted with certainty. As such, there can be significant volatility in interim tax provisions.

Income tax expense for the three months ended March 31, 2020 was $10.0 million, or 20.0 percent of pre-tax income as compared with $16.9 million, or 24.9 percent of pre-tax income for the three months ended March 31, 2019. Income tax expense for the nine months ended March 31, 2020 was $34.6 million, or 22.4 percent of pre-tax income as compared with $35.3 million, or 23.0 percent of pre-tax income for the nine months ended March 31, 2019.

Income tax expense in the three and nine months ended March 31, 2020 includes tax benefits of $1.6 million as a result of changes in the Company’s prior year tax positions. Income tax expense in the nine months ended March 31, 2019 included tax benefits of $1.8 million as a result of changes in the Company’s prior year tax positions.

The Coronavirus Aid, Relief and Economic Security Act (the “CARES Act”) was enacted on March 27, 2020. The CARES Act established new provisions, including but not limited to, expanded deduction of certain qualified capital expenditures, delayed payment of certain employment taxes, expanded use of net operating losses, reduced limitations on deductions of interest expense and extension of funding for defined benefit plans. The Company is continuing to evaluate these provisions but does not anticipate the CARES Act will have a significant impact on our financial position, results of operations or cash flows.

The Tax Cuts and Jobs Act was enacted on December 22, 2017. The Tax Cuts and Jobs Act included provisions that reduced the federal corporate income tax rate, created a territorial tax system with a one-time mandatory tax on previously deferred foreign earnings (i.e. transition tax), and changed certain business deductions including allowing for immediate expensing of certain qualified capital expenditures and limitations on deductions of interest expense. The accounting for the income tax effects of the Tax Cuts and Jobs Act was completed during the three months ended December 31, 2018. A discrete tax benefit of $0.2 million was recorded for the transition tax offset by a discrete tax charge of $0.2 million for the re-measurement of deferred tax assets and liabilities in the three months ended December 31, 2018.

17. Business Segments

The Company has two reportable segments, SAO and PEP.

The SAO segment is comprised of the Company’s major premium alloy and stainless steel manufacturing operations. This includes operations performed at mills primarily in Reading and Latrobe, Pennsylvania and surrounding areas as well as South Carolina and Alabama. The combined assets of the SAO operations are managed in an integrated manner to optimize efficiency and profitability across the total system.

The PEP segment is comprised of the Company’s differentiated operations. This segment includes the Dynamet titanium business, the Carpenter Powder Products business, the Amega West business, the Carpenter Additive business, and the Latrobe and Mexico distribution businesses. Effective July 1, 2019, the Company's LPW, CalRAM and Powder business in Alabama and West Virginia were combined into the Carpenter Additive business. The businesses in the PEP segment are managed with an entrepreneurial structure to promote flexibility and agility to quickly respond to market dynamics.

The Company’s executive management evaluates the performance of these operating segments based on sales, operating income and cash flow generation. Segment operating profit excludes general corporate costs, which is comprised of executive and director compensation and other corporate facilities and administrative expenses not allocated to the segments. Also excluded are items that management considers not representative of ongoing operations, such as restructuring charges and other specifically-identified income or expense items.

On a consolidated basis, one customer, Arconic Inc., accounted for approximately 10 percent and 11 percent of net sales for the three months ended March 31, 2020 and 2019, respectively. On a consolidated basis, one customer, Arconic Inc., accounted for approximately 10 percent and 11 percent of net sales for the nine months ended March 31, 2020 and 2019, respectively. Approximately 10 percent of the accounts receivable outstanding at March 31, 2020 was due from one customer, Arconic Inc. Approximately 12 percent of the accounts receivable outstanding at June 30, 2019 was due from one customer, Arconic Inc.

	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
Net Sales:				
Specialty Alloys Operations	$ 488.1	$ 498.3	$ 1,462.2	$ 1,435.4
Performance Engineered Products	108.6	128.7	324.0	353.4
Intersegment	(11.3)	(17.1)	(42.4)	(50.0)
Consolidated net sales	$ 585.4	$ 609.9	$ 1,743.8	$ 1,738.8

	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
Operating Income (Loss):				
Specialty Alloys Operations	$ 76.4	$ 73.6	$ 233.7	$ 195.3
Performance Engineered Products	(0.3)	16.6	(2.0)	28.3
Corporate costs (including restructuring charges)	(17.8)	(17.3)	(58.8)	(51.5)
Intersegment	0.4	0.3	0.6	1.5
Consolidated operating income	$ 58.7	$ 73.2	$ 173.5	$ 173.6

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	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
Depreciation and Amortization:				
Specialty Alloys Operations	$ 23.1	$ 23.8	$ 69.8	$ 71.3
Performance Engineered Products	6.5	6.0	18.5	16.5
Corporate	1.8	1.2	4.4	3.6
Intersegment	(0.2)	(0.2)	(0.5)	(0.5)
Consolidated depreciation and amortization	$ 31.2	$ 30.8	$ 92.2	$ 90.9

	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
Capital Expenditures:				
Specialty Alloys Operations	$ 34.1	$ 24.6	$ 84.3	$ 66.0
Performance Engineered Products	4.3	15.3	15.9	42.2
Corporate	11.3	9.4	43.9	23.6
Intersegment	—	(0.3)	(0.1)	(1.1)
Consolidated capital expenditures	$ 49.7	$ 49.0	$ 144.0	$ 130.7

($ in millions)	March 31, 2020	June 30, 2019
Total Assets:		
Specialty Alloys Operations	$ 2,448.7	$ 2,349.2
Performance Engineered Products	682.3	664.8
Corporate	311.3	192.5
Intersegment	(12.9)	(18.7)
Consolidated total assets	$ 3,429.4	$ 3,187.8

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18. Reclassifications from Accumulated Other Comprehensive (Loss) Income (AOCI)

The changes in AOCI by component, net of tax, for the three months ended March 31, 2020 and 2019 were as follows:

Three Months Ended March 31, 2020 ($ in millions) (a)	Cash flow hedging items	Pension and other postretirement benefit plan items	Unrealized losses on available-for-sale securities	Foreign currency items	Total
Balances at December 31, 2019	$ (7.2)	$ (287.3)	$ —	$ (41.8)	$ (336.3)
Other comprehensive loss before reclassifications	(7.1)	—	—	(13.2)	(20.3)
Amounts reclassified from AOCI (b)	(1.8)	3.1	—	—	1.3
Net other comprehensive (loss) income	(8.9)	3.1	—	(13.2)	(19.0)
Balances at March 31, 2020	$ (16.1)	$ (284.2)	$ —	$ (55.0)	$ (355.3)

Three Months Ended March 31, 2019 ($ in millions) (a)	Cash flow hedging items	Pension and other postretirement benefit plan items	Unrealized losses on available-for-sale securities	Foreign currency items	Total
Balances at December 31, 2018	$ (15.6)	$ (217.0)	$ —	$ (44.9)	$ (277.5)
Other comprehensive income before reclassifications	5.0	—	—	1.1	6.1
Amounts reclassified from AOCI (b)	(1.8)	1.7	—	—	(0.1)
Net other comprehensive income	3.2	1.7	—	1.1	6.0
Balances at March 31, 2019	$ (12.4)	$ (215.3)	$ —	$ (43.8)	$ (271.5)

(a) All amounts are net of tax. Amounts in parentheses indicate debits.
(b) See separate table below for further details.

The changes in AOCI by component, net of tax, for the nine months ended March 31, 2020 and 2019 were as follows:

Nine Months Ended March 31, 2020 ($ in millions) (a)	Cash flow hedging items	Pension and other postretirement benefit plan items	Unrealized losses on available-for-sale securities	Foreign currency items	Total
Balances at June 30, 2019	$ (14.8)	$ (293.3)	$ —	$ (43.7)	$ (351.8)
Other comprehensive income (loss) before reclassifications	6.8	—	—	(11.3)	(4.5)
Amounts reclassified from AOCI (b)	(8.1)	9.1	—	—	1.0
Net other comprehensive (loss) income	(1.3)	9.1	—	(11.3)	(3.5)
Balances at March 31, 2020	$ (16.1)	$ (284.2)	$ —	$ (55.0)	$ (355.3)

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Nine Months Ended March 31, 2019 ($ in millions) (a)	Cash flow hedging items	Pension and other postretirement benefit plan items	Unrealized (losses) gains on available-for-sale securities	Foreign currency items	Total
Balances at June 30, 2018	$ 23.8	$ (220.4)	$ (0.3)	$ (42.9)	$ (239.8)
Cumulative adjustment upon adoption of ASU 2017-12	(1.0)	—	—	—	(1.0)
Other comprehensive (loss) income before reclassifications	(34.2)	—	0.3	(0.9)	(34.8)
Amounts reclassified from AOCI (b)	(1.0)	5.1	—	—	4.1
Net other comprehensive (loss) income	(36.2)	5.1	0.3	(0.9)	(31.7)
Balance at March 31, 2019	$ (12.4)	$ (215.3)	$ —	$ (43.8)	$ (271.5)

(a) All amounts are net of tax. Amounts in parentheses indicate debits.
(b) See separate table below for further details.

The following is a summary of amounts reclassified from AOCI for the three and nine months ended March 31, 2020 and 2019:

Details about AOCI Components ($ in millions) (a)	Location of gain (loss)	Amount Reclassified from AOCI Three Months Ended March 31, 2020	Amount Reclassified from AOCI Three Months Ended March 31, 2019	Amount Reclassified from AOCI Nine Months Ended March 31, 2020	Amount Reclassified from AOCI Nine Months Ended March 31, 2019
Cash flow hedging items:					
Commodity contracts	Cost of sales	$ 2.2	$ 2.1	$ 9.7	$ 0.3
Foreign exchange contracts	Net sales	0.1	0.2	0.7	0.8
Forward interest rate swaps	Interest expense	0.1	0.1	0.3	0.3
Total before tax		2.4	2.4	10.7	1.4
Tax expense		(0.6)	(0.6)	(2.6)	(0.4)
Net of tax		$ 1.8	$ 1.8	$ 8.1	$ 1.0

Details about AOCI Components ($ in millions) (a)	Location of gain (loss)	Amount Reclassified from AOCI Three Months Ended March 31, 2020	Amount Reclassified from AOCI Three Months Ended March 31, 2019	Amount Reclassified from AOCI Nine Months Ended March 31, 2020	Amount Reclassified from AOCI Nine Months Ended March 31, 2019
Amortization of pension and other postretirement benefit plan items:					
Net actuarial loss	(b)	$ (4.5)	$ (3.0)	$ (13.5)	$ (9.0)
Prior service benefit	(b)	0.5	0.8	1.3	2.4
Total before tax		(4.0)	(2.2)	(12.2)	(6.6)
Tax benefit		0.9	0.5	3.1	1.5
Net of tax		$ (3.1)	$ (1.7)	$ (9.1)	$ (5.1)

(a) Amounts in parentheses indicate debits to income/loss.
(b) These AOCI components are included in the computation of net periodic benefit cost (see Note 9. Pension and Other Postretirement Benefits for additional details).

19. Subsequent Event

On April 29, 2020, the Company approved restructuring actions to exit the Amega West business and to close two domestic powder metals production facilities. These strategic actions were taken to drive long-term, profitable growth in light of both the current weakness in the oil and gas sub-market and the economic uncertainties resulting from the COVID-19 pandemic. As a result of these actions, the Company expects to record restructuring charges between $80 million and $100 million before taxes, in the fourth quarter of fiscal year 2020. These restructuring charges include asset impairments, lease termination costs and employee separation costs impacting approximately 220 employees.

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

Background and General

We are a producer and distributor of premium specialty alloys, including titanium alloys, powder metals, stainless steels, alloy steels, and tool steels as well as drilling tools. We are a recognized leader in high-performance specialty alloy-based materials and process solutions for critical applications in the aerospace, defense, medical, transportation, energy, industrial and consumer markets. We have evolved to become a pioneer in premium specialty alloys, including titanium, nickel, and cobalt, as well as alloys specifically engineered for additive manufacturing ("AM") processes and soft magnetics applications. We have expanded our AM capabilities to provide a complete "end-to-end" solution to accelerate materials innovation and streamline parts production. We primarily process basic raw materials such as nickel, cobalt, titanium, manganese, chromium, molybdenum, iron scrap and other metal alloying elements through various melting, hot forming and cold working facilities to produce finished products in the form of billet, bar, rod, wire and narrow strip in many sizes and finishes. We also produce certain metal powders and parts. Our sales are distributed directly from our production plants and distribution network as well as through independent distributors. Unlike many other specialty steel producers, we operate our own worldwide network of service and distribution centers. These service centers, located in the United States, Canada, Mexico, Europe and Asia allow us to work more closely with customers and to offer various just-in-time stocking programs.

As part of our overall business strategy, we have sought out and considered opportunities related to strategic acquisitions and joint collaborations as well as possible business unit dispositions aimed at broadening our offering to the marketplace. We have participated with other companies to explore potential terms and structures of such opportunities and expect that we will continue to evaluate these opportunities.

Our discussions below in this Item 2 are based upon the more detailed discussions about our business, operations and financial condition included in Item 7 of our 2019 Form 10-K. Our discussions here focus on our results during or as of the three and nine-month periods ended March 31, 2020 and the comparable periods of fiscal year 2019, and to the extent applicable, on material changes from information discussed in the 2019 Form 10-K and other important intervening developments or information that we have reported on Form 8-K. These discussions should be read in conjunction with the 2019 Form 10-K for detailed background information and with any such intervening Form 8-K.

Impact of Raw Material Prices and Product Mix

We value most of our inventory utilizing the last-in, first-out ("LIFO") inventory costing method. Under the LIFO inventory costing method, changes in the cost of raw materials and production activities are recognized in cost of sales in the current period even though these materials may potentially have been acquired at significantly different values due to the length of time from the acquisition of the raw materials to the sale of the processed finished goods to the customers. In a period of rising raw material costs, the LIFO inventory valuation normally results in higher cost of sales. Conversely, in a period of decreasing raw material costs, the LIFO inventory valuation normally results in lower cost of sales.

The volatility of the costs of raw materials has impacted our operations over the past several years. We, and others in our industry, generally have been able to pass cost increases on major raw materials through to our customers using surcharges that are structured to recover increases in raw material costs. Generally, the formula used to calculate a surcharge is based on published prices of the respective raw materials for the previous month which correlates to the prices we pay for our raw material purchases. However, a portion of our surcharges to customers may be calculated using a different surcharge formula or may be based on the raw material prices at the time of order, which creates a lag between surcharge revenue and corresponding raw material costs recognized in cost of sales. The surcharge mechanism protects our net income on such sales except for the lag effect discussed above. However, surcharges have had a dilutive effect on our gross margin and operating margin percentages as described later in this report.

Approximately 25 percent of our net sales are sales to customers under firm price sales arrangements. Firm price sales arrangements involve a risk of profit margin fluctuations, particularly when raw material prices are volatile. In order to reduce the risk of fluctuating profit margins on these sales, we enter into commodity forward contracts to purchase certain critical raw materials necessary to produce the related products sold. Firm price sales arrangements generally include certain annual purchasing commitments and consumption schedules agreed to by the customers at selling prices based on raw material prices at the time the arrangements are established. If a customer fails to meet the volume commitments (or the consumption schedule deviates from the agreed-upon terms of the firm price sales arrangements), the Company may need to absorb the gains or losses associated with the commodity forward contracts on a temporary basis. Gains or losses associated with commodity forward contracts are reclassified to earnings/loss when earnings are impacted by the hedged transaction. Because we value most of our inventory under the LIFO costing methodology, changes in the cost of raw materials and production activities are recognized in cost of sales in the current period attempting to match the most recently incurred costs with revenues. Gains or losses on the commodity forward contracts are reclassified from other comprehensive income (loss) together with the actual purchase price of the underlying commodities when the underlying commodities are purchased and recorded in inventory. To the extent that the total purchase price of the commodities, inclusive of the gains or losses on the commodity forward contracts, are higher or lower relative to the beginning of year costs, our cost of goods sold reflects such amounts. Accordingly, the gains and/or losses associated with commodity forward contracts may not impact the same period that the firm price sales arrangements revenue is recognized, and comparisons of gross profit from period to period may be impacted. These firm price sales arrangements are expected to continue as we look to strengthen our long-term customer relationships by expanding, renewing and in certain cases extending to a longer-term, our customer long-term arrangements.

We produce hundreds of grades of materials with a wide range of pricing and profit levels depending on the grade. In addition, our product mix within a period is subject to the fluctuating order patterns of our customers as well as decisions we may make on participation in certain products based on available capacity, including the impacts of capacity commitments we may have under existing customer agreements. While we expect to see positive contribution from a more favorable product mix in our margin performance over time, the impact by period may fluctuate and period-to-period comparisons may vary.

Net Pension Expense

Net pension expense, as we define it below, includes the net periodic benefit costs related to both our pension and other postretirement plans. The net periodic benefit costs are determined annually based on beginning of year balances and are recorded ratably throughout the fiscal year, unless a significant re-measurement event occurs. We currently expect that the total net periodic benefit costs for fiscal year 2020 will be $15.0 million as compared with $11.4 million in fiscal year 2019. The following is the net pension expense for the three and nine months ended March 31, 2020 and 2019:

	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
Pension plans	$ 3.0	$ 2.4	$ 9.0	$ 7.2
Other postretirement plans	0.8	0.5	2.5	1.5
Net pension expense	$ 3.8	$ 2.9	$ 11.5	$ 8.7

Net pension expense is recorded in accounts that are included in cost of sales and selling, general and administrative expenses based on the function of the associated employees and in other (expense) income, net. The following is a summary of the classification of net pension expense for the three and nine months ended March 31, 2020 and 2019:

	Three Months Ended March 31,		Nine Months Ended March 31,	
($ in millions)	2020	2019	2020	2019
Cost of sales:				
Service cost	$ 2.7	$ 2.5	$ 8.2	$ 7.5
Selling, general and administrative expenses:				
Service cost	0.4	0.4	1.1	1.2
Other (expense) income, net:				
Pension earnings, interest and deferrals	0.7	—	2.2	—
Net pension expense	$ 3.8	$ 2.9	$ 11.5	$ 8.7

As of March 31, 2020 and June 30, 2019, amounts related to the net pension expense capitalized in gross inventory were $1.7 million and $1.7 million, respectively.

Operating Performance Overview

Our third quarter results reflected solid execution in a challenging environment due to the impact of the 737 MAX production halt as well as the coronavirus disease 2019 (COVID-19) pandemic. Our performance speaks largely to the dedication of our employees who have responded to an unprecedented situation with a focused commitment to delivering for our customers while also adopting enhanced safety programs.

In response to COVID-19 we mobilized with a sharp focus on the health and safety of our employees, families and communities. We moved quickly to develop and implement benchmark safety protocols aimed at protecting our employees in a rapidly changing environment.

Looking ahead, visibility across our business is limited given the ongoing COVID-19 pandemic and its potential impact on demand patterns across our end-use markets. We remain in close contact with our customers and will continue working alongside them to fulfill their material requirements. We believe our financial position remains healthy and we are executing targeted cost reduction and cash generation initiatives to drive enhanced flexibility. While we cannot predict the duration of COVID-19 and the total impact it will have on our end-use markets, we remain fully committed to the safety of our employees and continue to serve as a critical supply chain partner for our customers during this difficult time. We remain a key supplier of mission-critical applications with strong customer relationships, a deep solutions portfolio and established market leadership across a number of attractive end-use markets.

COVID-19 Cost Reduction Actions

COVID-19 related disruptions negatively impacted operating income results by approximately $5.5 million in the third quarter of fiscal 2020. This impact is principally associated with disruption in the ability to ship certain materials late in the quarter as additional safety measures were implemented across our facilities as well as certain customers who were unable to accept deliveries due to shutdowns.

As the COVID-19 pandemic impacts global economic conditions and near-term customer demand patterns, we have taken several actions to initiate cost savings and preserve liquidity. These actions include implementing temporary furloughs for certain production and maintenance employees across facilities based on planned production scheduling, implementing a global hiring freeze and reducing planned capital expenditures for fiscal year 2021 by approximately 25-30% from fiscal year 2020. We also initiated actions to reduce working capital levels, principally inventory, to align with anticipated customer demand and expect that working capital represents a significant opportunity for cash generation in the near-term.

In addition, in late April we approved actions to exit the Amega West business and close two domestic powder metals production facilities. As a result of the decisions to close these facilities, we expect to save $15 million to $20 million annually. We expect to record restructuring charges including asset impairments, lease termination costs and employee separation costs between $80 million and $100 million before taxes in the fourth quarter of fiscal year 2020.

We have identified additional actions to preserve cost and manage cash and have plans to deploy those actions as deemed necessary to respond to the evolving situation.

Results of Operations — Three Months Ended March 31, 2020 vs. Three Months Ended March 31, 2019

For the three months ended March 31, 2020, we reported net income of $39.9 million, or $0.82 per diluted share. This compares with net income for the same period a year earlier of $51.1 million, or $1.05 per diluted share. The current period results reflect the impact of the 737 MAX production halt and the COVID-19 pandemic. Despite these challenges we saw strengthening product mix across all end-use markets and increased sales in our Aerospace and Defense and Medical end-use markets compared to the prior year period. The prior period results included an $11.4 million benefit related to an insurance recovery.

Net Sales

Net sales for the three months ended March 31, 2020 were $585.4 million, which was a 4 percent decrease over the same period a year ago. Excluding surcharge revenue, sales decreased 2 percent on a 9 percent decrease in shipment volume from the same period a year ago. The results excluding surcharge revenue reflect a favorable product mix across key end-use markets despite the 737 MAX production halt.

Geographically, sales outside the United States increased 11 percent from the same period a year ago to $217.7 million for the three months ended March 31, 2020. The increase is primarily due to stronger demand in the Aerospace and Defense end-use market in Europe, Asia Pacific and Canada. A portion of our sales outside the United States are denominated in foreign currencies. The fluctuations in foreign currency exchange rates resulted in a $1.1 million decrease in sales during the three months ended March 31, 2020 compared to the three months ended March 31, 2019. Net sales outside the United States represented 37 percent and 32 percent of total net sales for the three months ended March 31, 2020 and 2019, respectively.

Sales by End-Use Markets

We sell to customers across diversified end-use markets. The following table includes comparative information for our net sales, which includes surcharge revenue by principal end-use markets. We believe this is helpful supplemental information in analyzing the performance of the business from period to period:

($ in millions)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019	$ Increase (Decrease)	% Increase (Decrease)
Aerospace and Defense	$ 356.4	$ 342.1	$ 14.3	4 %
Medical	53.0	55.1	(2.1)	(4)%
Transportation	33.5	39.9	(6.4)	(16)%
Energy	32.7	49.0	(16.3)	(33)%
Industrial and Consumer	80.1	87.4	(7.3)	(8)%
Distribution	29.7	36.4	(6.7)	(18)%
Total net sales	$ 585.4	$ 609.9	$ (24.5)	(4)%

The following table includes comparative information for our net sales by the same principal end-use markets, but excluding surcharge revenue:

($ in millions)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019	$ Increase (Decrease)	% Increase (Decrease)
Aerospace and Defense	$ 293.4	$ 273.8	$ 19.6	7 %
Medical	47.7	47.1	0.6	1 %
Transportation	27.8	33.5	(5.7)	(17)%
Energy	28.8	40.8	(12.0)	(29)%
Industrial and Consumer	67.8	71.9	(4.1)	(6)%
Distribution	29.5	35.9	(6.4)	(18)%
Total net sales excluding surcharge revenue	$ 495.0	$ 503.0	$ (8.0)	(2)%

Sales to the Aerospace and Defense end-use market increased 4 percent from the third quarter a year ago to $356.4 million. Excluding surcharge revenue, sales increased 7 percent from the third quarter a year ago on a 2 percent decrease in shipment volume. The results reflect stronger year-over-year demand in key aerospace sub-markets with limited impact from the 737 MAX slow down in the current quarter. We continue to experience strong demand for our defense related applications driven by specific programs.

Medical end-use market sales decreased 4 percent from the third quarter a year ago to $53.0 million. Excluding surcharge revenue, sales increased 1 percent on 5 percent lower shipment volume from the third quarter a year ago. The results reflect improved product mix in all of our Medical end-use sub-markets despite the impact of temporary delays of elective medical procedures from the COVID-19 pandemic.

Transportation end-use market sales decreased 16 percent from the third quarter a year ago to $33.5 million. Excluding surcharge revenue, sales decreased 17 percent on 19 percent lower shipment volume from the third quarter a year ago. The results reflect decreased demand caused by COVID-19 related production disruptions in Asia and Europe in the current quarter.

Sales to the Energy end-use market of $32.7 million reflect a 33 percent decrease from the third quarter a year ago. Excluding surcharge revenue, sales decreased 29 percent from a year ago. The results reflect the decreasing demand globally including a 55% decrease in North America rig counts and the impact of COVID-19. The decline in oil and gas sub-market is partially offset by modest increases in the power generation sub-market.

Industrial and Consumer end-use market sales decreased 8 percent from the third quarter a year ago to $80.1 million. Excluding surcharge revenue, sales decreased 6 percent on 12 percent lower shipment volume. The results reflect the impact of reduced demand for materials used in select industrial applications offset by revenue growth and improved product mix in consumer electronics.

Gross Profit

Our gross profit in the third quarter decreased 11 percent to $109.5 million, or 18.7 percent of net sales as compared with $123.2 million, or 20.2 percent of net sales in the same quarter a year ago. Excluding the impact of surcharge revenue, our adjusted gross margin in the third quarter was 22.1 percent as compared to 24.5 percent in the same period a year ago. The current period results were impacted by the 737 MAX production halt and the COVID-19 pandemic. The prior period results included an $11.4 million benefit related to an insurance recovery.

While the surcharge generally protects the absolute gross profit dollars, it does have a dilutive effect on gross margin as a percent of sales. The following represents a summary of the dilutive impact of the surcharge on gross margin for the comparative three-month periods. See the section “Non-GAAP Financial Measures” below for further discussion of these financial measures.

($ in millions)	Three Months Ended March 31, 2020	2019
Net sales	$ 585.4	$ 609.9
Less: surcharge revenue	90.4	106.9
Net sales excluding surcharge revenue	$ 495.0	$ 503.0
Gross profit	$ 109.5	$ 123.2
Gross margin	18.7%	20.2%
Adjusted gross margin excluding surcharge revenue	22.1%	24.5%

Selling, General and Administrative Expenses

Selling, general and administrative expenses of $50.8 million were 8.7 percent of net sales (10.3 percent of net sales excluding surcharge) as compared with $50.0 million and 8.2 percent of net sales (9.9 percent of net sales excluding surcharge) in the same quarter a year ago. The selling, general and administrative expenses reflect higher spending in key growth areas including additive manufacturing in addition to market driven losses in compensation plans compared to the same quarter a year ago. These items were partially offset by lower costs related to variable compensation in the current quarter.

Operating Income

Our operating income in the recent third quarter was $58.7 million or 10.0 percent of net sales as compared with $73.2 million or 12.0 percent of net sales in the same quarter a year ago. Excluding surcharge revenue, adjusted operating margin was 11.9 percent for the most recent quarter as compared with 14.6 percent a year ago. The results for the third quarter of fiscal year 2020 primarily reflect the negative impact of the ongoing 737 MAX production halt and the COVID-19 pandemic. Our participation in diverse end-use markets and our commitment to the Carpenter Operating Model muted the impact to our operating margin. The prior period results included an $11.4 million benefit related to an insurance recovery.

The following presents our operating income and operating margin, in each case excluding the impact of surcharge revenue on net sales. We present and discuss these financial measures because management believes removing these items provides a more consistent and meaningful basis for comparing ongoing results of operations from period to period. See the section “Non-GAAP Financial Measures” below for further discussion of these financial measures.

($ in millions)	Three Months Ended March 31, 2020	2019
Net sales	$ 585.4	$ 609.9
Less: surcharge revenue	90.4	106.9
Net sales excluding surcharge revenue	$ 495.0	$ 503.0
Operating income	$ 58.7	$ 73.2
Operating margin	10.0%	12.0%
Adjusted operating margin excluding surcharge revenue	11.9%	14.6%

Interest Expense

Interest expense for the three months ended March 31, 2020 was $4.9 million compared with $7.1 million in the same period a year ago. We have used interest rate swaps to achieve a level of floating rate debt to fixed rate debt where appropriate. Interest expense for the three months ended March 31, 2020 and 2019 includes net gains from interest rate swaps of $0.6 million compared with net losses of $0.2 million, respectively. Capitalized interest reduced interest expense by $2.3 million for the three months ended March 31, 2020 and $1.3 million for the three months ended March 31, 2019.

Other (Expense) Income, Net

Other expense, net for the three months ended March 31, 2020 was $3.9 million as compared with $1.9 million of other income, net for the three months ended March 31, 2019. The current year results include unfavorable market returns on investments used to fund Company-owned life insurance contracts and investments held in rabbi trusts. The market volatility was driven by the COVID-19 pandemic. The other income, net for the three months ended March 31, 2019 reflected favorable market returns on investments used to fund Company-owned life insurance contracts and investments held in rabbi trusts.

Income Taxes

Income tax expense in the recent third quarter was $10.0 million, or 20.0 percent of pre-tax income compared with $16.9 million, or 24.9 percent of pre-tax income in the same quarter a year ago. Income tax expense for the three months ended March 31, 2020 includes tax benefits of $1.6 million as a result of changes in the Company's prior year tax positions.

The Coronavirus Aid, Relief and Economic Security Act (the "CARES Act") was enacted on March 27, 2020. The CARES Act established new provisions, including but not limited to, expanded deduction of certain qualified capital expenditures, delayed payment of certain employment taxes, expanded use of net operating losses, reduced limitations on deductions of interest expense and extension of funding for defined benefit plans. The Company is continuing to evaluate these provisions but does not anticipate the CARES Act will have a significant impact on our financial position, results of operations or cash flows.

Business Segment Results

We have two reportable business segments: SAO and PEP.

The following table includes comparative information for volumes by business segment:

	Three Months Ended March 31,			
(Pounds sold, in thousands)	2020	2019	(Decrease) Increase	% (Decrease) Increase
Specialty Alloys Operations	59,052	65,296	(6,244)	(10)%
Performance Engineered Products *	3,202	3,540	(338)	(10)%
Intersegment	(116)	(918)	802	87 %
Consolidated pounds sold	62,138	67,918	(5,780)	(9)%

* Pounds sold data for PEP segment includes Dynamet, Carpenter Powder Products and Additive businesses only.

The following table includes comparative information for net sales by business segment:

	Three Months Ended March 31,			
($ in millions)	2020	2019	$ (Decrease) Increase	% (Decrease) Increase
Specialty Alloys Operations	$ 488.1	$ 498.3	$ (10.2)	(2)%
Performance Engineered Products	108.6	128.7	(20.1)	(16)%
Intersegment	(11.3)	(17.1)	5.8	34 %
Total net sales	$ 585.4	$ 609.9	$ (24.5)	(4)%

The following table includes comparative information for our net sales by business segment, but excluding surcharge revenue:

($ in millions)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019	$ Increase (Decrease)	% Increase (Decrease)
Specialty Alloys Operations	$ 398.8	$ 393.3	$ 5.5	1 %
Performance Engineered Products	107.1	125.9	(18.8)	(15)%
Intersegment	(10.9)	(16.2)	5.3	33 %
Total net sales excluding surcharge revenue	$ 495.0	$ 503.0	$ (8.0)	(2)%

Specialty Alloys Operations Segment

Net sales for the quarter ended March 31, 2020 for the SAO segment decreased 2 percent to $488.1 million, as compared with $498.3 million in the same quarter a year ago. Excluding surcharge revenue, net sales increased 1 percent on 10 percent lower shipment volume from a year ago. The SAO Segment results reflect stronger product mix in all end-use markets compared to the prior year same quarter partially offset by the impacts of the 737 MAX production halt and the COVID-19 pandemic.

Operating income for the SAO segment was $76.4 million or 15.7 percent of net sales (19.2 percent of net sales excluding surcharge revenue) in the recent third quarter, as compared with $73.6 million or 14.8 percent of net sales (18.7 percent of net sales excluding surcharge revenue) in the same quarter a year ago. The results reflect stronger product mix compared to the prior year same quarter. This was offset by productivity losses in the current quarter due to the COVID-19 pandemic.

Performance Engineered Products Segment

Net sales for the quarter ended March 31, 2020 for the PEP segment decreased 16 percent to $108.6 million, as compared with $128.7 million in the same quarter a year ago. Excluding surcharge revenue, net sales of $107.1 million decreased from $125.9 million a year ago. The results reflect lower sales in our Energy end-use market, primarily in the domestic oil and gas sub-market. Distribution sales were also down as a result of the impact of tariffs. These decreases were partially offset by an increase in the Medical end-use market.

Operating loss for the PEP segment was $0.3 million or negative 0.3 percent of net sales in the recent third quarter, compared with operating income of $16.6 million or 12.9 percent of net sales in the same quarter a year ago. The results were impacted by our continuing strategic investment in additive manufacturing, decreased activity in the North American oil and gas sub-market and the impact of tariffs on our distribution business. The prior year third quarter results were impacted by an $11.4 million benefit related to an insurance recovery.

Results of Operations — Nine Months Ended March 31, 2020 vs. Nine Months Ended March 31, 2019

Net Sales

Net sales for the nine months ended March 31, 2020 were $1,743.8 million, which was flat compared to the same period a year ago. Excluding surcharge revenue, sales increased 3 percent on 7 percent lower shipment volume from the same period a year ago. Our participation in diverse end-use markets resulted in comparable sales in the current fiscal year versus the prior year period despite the challenging environment. The results reflect the impact of stronger product mix and demand for materials used in the Aerospace and Defense and Medical end-use markets.

Geographically, sales outside the United States increased 12 percent from the same period a year ago to $620.2 million for the nine months ended March 31, 2020. The increase is primarily due to stronger product demand in the Aerospace and Defense end-use market in Europe, Asia Pacific and Canada. A portion of our sales outside the United States are denominated in foreign currencies. The impact of fluctuations in foreign currency exchange rates resulted in a $2.0 million decrease in sales during the nine months ended March 31, 2020 compared to the nine months ended March 31, 2019. Net sales outside the United States represented 36 percent and 32 percent of total net sales for the nine months ended March 31, 2020 and 2019, respectively.

Sales by End-Use Markets

We sell to customers across diversified end-use markets. The following table includes comparative information for our net sales, which includes surcharge revenue by principal end-use markets. We believe this is helpful supplemental information in analyzing the performance of the business from period to period:

($ in millions)	Nine Months Ended March 31, 2020	Nine Months Ended March 31, 2019	$ Increase (Decrease)	% Increase (Decrease)
Aerospace and Defense	$ 1,058.4	$ 951.9	$ 106.5	11 %
Medical	151.0	147.6	3.4	2 %
Transportation	111.9	118.0	(6.1)	(5)%
Energy	103.2	136.1	(32.9)	(24)%
Industrial and Consumer	231.4	280.9	(49.5)	(18)%
Distribution	87.9	104.3	(16.4)	(16)%
Total net sales	$ 1,743.8	$ 1,738.8	$ 5.0	— %

The following table includes comparative information for our net sales by the same principal end-use markets, but excluding surcharge revenue:

($ in millions)	Nine Months Ended March 31, 2020	Nine Months Ended March 31, 2019	$ Increase (Decrease)	% Increase (Decrease)
Aerospace and Defense	$ 858.3	$ 747.6	$ 110.7	15 %
Medical	135.2	125.0	10.2	8 %
Transportation	91.4	94.3	(2.9)	(3)%
Energy	88.7	114.7	(26.0)	(23)%
Industrial and Consumer	191.9	224.0	(32.1)	(14)%
Distribution	87.3	103.2	(15.9)	(15)%
Total net sales excluding surcharge revenue	$ 1,452.8	$ 1,408.8	$ 44.0	3 %

Sales to the Aerospace and Defense end-use market increased 11 percent from the same period a year ago to $1,058.4 million. Excluding surcharge revenue, sales increased 15 percent from the same period a year ago on a 5 percent increase in shipment volume. The results reflect stronger demand in all sub-markets and improved product mix for key sub-markets compared to the prior year quarter.

Medical end-use market sales increased 2 percent from the same period a year ago to $151.0 million. Excluding surcharge revenue, sales increased 8 percent on 2 percent higher shipment volume from the same period a year ago. The results reflect strong market conditions with increased sales and improved product mix within the orthopedic and dental sub-markets.

Transportation end-use market sales of $111.9 million decreased by 5 percent from the same period a year ago. Excluding surcharge revenue, sales of $91.4 million decreased 3 percent on 10 percent lower shipment volume from the same period a year ago. The results reflect weaker demand for our applications due to trade actions and tariffs during the first half of the fiscal year and COVID-19 production disruptions in the most recent quarter.

Sales to the Energy end-use market decreased 24 percent from the same period a year ago to $103.2 million. Excluding surcharge revenue, sales decreased 23 percent from a year ago. The results reflect decreased sales in the domestic oil and gas sub-market from global demand decreases and the impact of the COVID-19 pandemic. This is partially offset by modest increases in the international power generation sub-market.

Industrial and Consumer end-use market sales decreased 18 percent from the same period a year ago to $231.4 million. Excluding surcharge revenue, sales decreased 14 percent on a 24 percent decrease in shipment volume. The results reflect the impact of lower demand primarily in the industrial sub-market offset partially by increased sales and stronger product mix in consumer electronics.

Gross Profit

Our gross profit in the nine months ended March 31, 2020 increased 4 percent to $334.8 million, or 19.2 percent of net sales as compared with $321.9 million, or 18.5 percent of net sales in the same period a year ago. Excluding the impact of surcharge revenue, our gross margin in the nine months ended March 31, 2020 was 23.0 percent as compared to 22.8 percent in the same period a year ago. The results for the nine months ended March 31, 2020 reflect stronger product mix across all end-use markets as well as operating cost improvements during the first half of the current fiscal year partially offset by impacts related to the 737 MAX production halt and the COVID-19 pandemic during the third quarter of fiscal year 2020.

Our surcharge mechanism is structured to recover increases in raw material costs, although in certain cases with a lag effect as discussed above. While the surcharge generally protects the absolute gross profit dollars, it does have a dilutive effect on gross margin as a percent of sales. The following represents a summary of the dilutive impact of the surcharge on gross margin for the comparative nine-month periods. See the section “Non-GAAP Financial Measures” below for further discussion of these financial measures.

	Nine Months Ended March 31,	
($ in millions)	2020	2019
Net sales	$ 1,743.8	$ 1,738.8
Less: surcharge revenue	291.0	330.0
Net sales excluding surcharge revenue	$ 1,452.8	$ 1,408.8
Gross profit	$ 334.8	$ 321.9
Gross margin	19.2%	18.5%
Adjusted gross margin excluding surcharge revenue	23.0%	22.8%

Selling, General and Administrative Expenses

Selling, general and administrative expenses of $159.0 million were 9.1 percent of net sales (10.9 percent of net sales excluding surcharge) for the nine months ended March 31, 2020 as compared with $148.3 million or 8.5 percent of net sales (10.5 percent of net sales excluding surcharge) in the same period a year ago. Selling, general and administrative expenses increased in the nine months ended March 31, 2020 reflecting the full impact from the LPW acquisition in the second quarter of fiscal year 2019 and higher spending in key growth areas including additive manufacturing and soft magnetics.

Restructuring Charges

During the nine months ended March 31, 2020, the Company incurred $2.3 million, before taxes, of restructuring charges in order to reduce overhead costs and position the Company to drive long-term, profitable growth.

Operating Income

Our operating income in the nine months ended March 31, 2020 was $173.5 million, or 9.9 percent of net sales as compared with $173.6 million, or 10.0 percent of net sales in the same period a year ago. Excluding surcharge revenue and special items, adjusted operating margin was 12.1 percent for the nine months ended March 31, 2020 and 12.4 percent for the same period a year ago. The decrease in the operating margin is a result of a strong first half of our fiscal year with increased sales and stronger product mix in key end-use markets partially offset by higher spending in additive manufacturing compared to the same period a year ago. The most recent quarter was impacted by the production halt of the 737 MAX and the COVID-19 pandemic.

The following presents our operating income and operating margin, in each case excluding the impact of surcharge revenue on net sales and special items. We present and discuss these financial measures because management believes removing these items provides a more consistent and meaningful basis for comparing ongoing results of operations from period to period. See the section "Non-GAAP Financial Measures" below for further discussion of these financial measures.

	Nine Months Ended March 31,	
($ in millions)	2020	2019
Net sales	$ 1,743.8	$ 1,738.8
Less: surcharge revenue	291.0	330.0
Net sales excluding surcharge revenue	$ 1,452.8	$ 1,408.8
Operating income	$ 173.5	$ 173.6
Special items:		
Restructuring charges	2.3	—
Acquisition-related costs	—	1.2
Operating income excluding special items	$ 175.8	$ 174.8
Operating margin	9.9%	10.0%
Adjusted operating margin excluding surcharge revenue and special items	12.1%	12.4%

Interest Expense

Interest expense for the nine months ended March 31, 2020 was $15.6 million compared with $20.3 million in the same period a year ago. Capitalized interest reduced interest expense by $6.5 million for the nine months ended March 31, 2020 and $3.2 million for the nine months ended March 31, 2019.

Other (Expense) Income, Net

Other expense, net was $3.4 million for the recent nine months ended March 31, 2020 compared with other income, net of $0.1 million in the same period a year ago.

Income Taxes

Income tax expense in the nine months ended March 31, 2020 was $34.6 million, or 22.4 percent of pre-tax income compared with $35.3 million, or 23.0 percent of pre-tax income in the nine months ended March 31, 2019. Income tax expense for the nine months ended March 31, 2020 includes tax benefits of $1.6 million as a result of changes in the Company's prior year tax positions. Income tax expense for the nine months ended March 31, 2019 includes tax benefits of $1.8 million as a result of changes in the Company's prior year tax positions.

The CARES Act was enacted on March 27, 2020. The CARES Act established new provisions, including but not limited to, expanded deduction of certain qualified capital expenditures, delayed payment of certain employment taxes, expanded use of net operating losses, reduced limitations on deductions of interest expense and extension of funding for defined benefit plans. The Company is continuing to evaluate these provisions but does not anticipate the CARES Act will have a significant impact on our financial position, results of operations or cash flows.

The Tax Cuts and Jobs Act was enacted on December 22, 2017. The Tax Cuts and Jobs Act included provisions that reduced the federal corporate income tax rate, created a territorial tax system with a one-time mandatory tax on previously deferred foreign earnings (i.e. transition tax), and changed certain business deductions including allowing for immediate expensing of certain qualified capital expenditures and limitations on deductions of interest expense. The accounting for the income tax effects of the Tax Cuts and Jobs Act was completed by December 31, 2018. A discrete tax benefit of $0.2 million was recorded for the transition tax offset by a discrete tax charge of $0.2 million for the re-measurement of deferred tax assets and liabilities in the three months ended December 31, 2018.

Business Segment Results

We have two reportable business segments: SAO and PEP.

The following table includes comparative information for volumes by business segment:

	Nine Months Ended March 31,			%
(Pounds sold, in thousands)	**2020**	**2019**	**Decrease (Increase)**	**Decrease (Increase)**
Specialty Alloys Operations	175,660	189,678	(14,018)	(7)%
Performance Engineered Products *	9,874	9,572	302	3 %
Intersegment	(1,800)	(1,798)	(2)	— %
Consolidated pounds sold	183,734	197,452	(13,718)	(7)%

* Pounds sold data for PEP segment includes Dynamet, Carpenter Powder Products and Additive businesses only.

The following table includes comparative information for net sales by business segment:

	Nine Months Ended March 31,		$	%
($ in millions)	**2020**	**2019**	**Increase (Decrease)**	**Increase (Decrease)**
Specialty Alloys Operations	$ 1,462.2	$ 1,435.4	$ 26.8	2 %
Performance Engineered Products	324.0	353.4	(29.4)	(8)%
Intersegment	(42.4)	(50.0)	7.6	15 %
Total net sales	$ 1,743.8	$ 1,738.8	$ 5.0	— %

The following table includes comparative information for our net sales by business segment, but excluding surcharge revenue:

	Nine Months Ended March 31,		$	%
($ in millions)	**2020**	**2019**	**Increase (Decrease)**	**Increase (Decrease)**
Specialty Alloys Operations	$ 1,174.5	$ 1,111.0	$ 63.5	6 %
Performance Engineered Products	319.1	343.3	(24.2)	(7)%
Intersegment	(40.8)	(45.5)	4.7	10 %
Total net sales excluding surcharge revenue	$ 1,452.8	$ 1,408.8	$ 44.0	3 %

Specialty Alloys Operations Segment

Net sales for the nine months ended March 31, 2020 for the SAO segment increased 2 percent to $1,462.2 million, as compared with $1,435.4 million in the same period a year ago. Excluding surcharge revenue, net sales increased 6 percent on 7 percent lower shipment volume from a year ago. The results primarily reflect increased sales in the Aerospace and Defense and Medical end-use markets compared to the prior year same period.

Operating income for the SAO segment was $233.7 million or 16.0 percent of net sales (19.9 percent of net sales excluding surcharge revenue) in the recent nine months ended March 31, 2020 as compared with $195.3 million or 13.6 percent of net sales (17.6 percent of net sales excluding surcharge revenue) in the same period a year ago. The increase in operating income reflects the impact of stronger product mix across all end-use markets as well as operating cost improvements compared to the prior year same period.

Performance Engineered Products Segment

Net sales for the nine months ended March 31, 2020 for the PEP segment decreased 8 percent to $324.0 million, as compared with $353.4 million in the same period a year ago. Excluding surcharge revenue, net sales decreased 7 percent from a year ago. The results reflect decreases in the Energy and Distribution end-use markets partially offset by increases in sales in the Aerospace and Defense and Medical end-use markets.

Operating loss for the PEP segment was $2.0 million or negative 0.6 percent of net sales in the recent nine months ended March 31, 2020, compared with an operating income of $28.3 million or 8.0 percent of net sales in the same period a year ago. The current year results were impacted by weak demand in the oil and gas sub-market and ongoing trade actions and tariffs on our distribution business. The prior year results were impacted by an $11.4 million benefit related to an insurance recovery.

Liquidity and Financial Resources

During the nine months ended March 31, 2020, we generated cash from operations of $94.9 million compared to $57.2 million in the same period a year ago. Our free cash flow, which we define under “Non-GAAP Financial Measures” below, was negative $77.9 million as compared to negative $169.7 million for the same period a year ago. The increase in cash provided from operating activities for the nine months ended March 31, 2020 compared to the same period a year ago was driven by working capital improvements, primarily inventory. The free cash flow results reflect higher capital spending levels in the current period as we continued to increase our investment in strategic growth areas. Prior year results included the impact of the acquisition of LPW.

Capital expenditures for property, plant, equipment and software were $144.0 million for the nine months ended March 31, 2020 as compared to $130.7 million for the same period a year ago. In fiscal year 2020, we expect capital expenditures to be approximately $170 million.

Dividends during the nine months ended March 31, 2020 and 2019 were $29.1 million and $28.9 million, respectively, and were paid at the same quarterly rate of $0.20 per share of common stock in both periods.

We have demonstrated the ability to generate cash to meet our needs through cash flows from operations, management of working capital and the ability to access capital markets to supplement internally generated funds. We generally target minimum liquidity of $150 million, consisting of cash and cash equivalents added to available borrowing capacity under our Credit Agreement. Our Credit Agreement contains a revolving credit commitment of $400 million, which expires in March 2022. As of March 31, 2020, we had $5.9 million of issued letters of credit and $170 million of short-term borrowings under the Credit Agreement. The balance of the Credit Agreement, $224.1 million, remains available to us. As of March 31, 2020, we had total liquidity of $317.1 million, including $93.0 million of cash and cash equivalents. From time to time during the nine months ended March 31, 2020, we have borrowed under our Credit Agreement. The weighted average daily borrowing under the Credit Agreement during the nine months ended March 31, 2020 was approximately $85.3 million with daily outstanding borrowings ranging from $11.0 million to $170.0 million during the period.

We believe that our cash and cash equivalents of $93.0 million as of March 31, 2020 and available borrowing capacity of $224.1 million under our credit facility will be sufficient to fund our cash needs over the foreseeable future.

During the nine months ended March 31, 2020, we made pension contributions of $4.9 million to our qualified defined benefit pension plans. We currently expect to make $1.3 million of additional contributions to our qualified defined benefit pension plans during the remainder of fiscal year 2020.

As of March 31, 2020, we had cash and cash equivalents of approximately $20.4 million held at various foreign subsidiaries. Our global deployment considers, among other things, geographic location of our subsidiaries’ cash balances, the locations of our anticipated liquidity needs, and the cost to access international cash balances, as necessary. From time to time, we may make short-term intercompany borrowings against our cash held outside the United States in order to reduce or eliminate any required borrowing under our Credit Agreement.

We are subject to certain financial and restrictive covenants under the Credit Agreement, which, among other things, require the maintenance of a minimum interest coverage ratio (3.50 to 1.00 as of March 31, 2020). The interest coverage ratio is defined in the Credit Agreement as, for any period, the ratio of consolidated earnings before interest, taxes, depreciation and amortization and non-cash net pension expense ("EBITDA") to consolidated interest expense for such period. The Credit Agreement also requires the Company to maintain a debt to capital ratio of less than 55%. The debt to capital ratio is defined in the Credit Agreement as the ratio of consolidated indebtedness, as defined therein, to consolidated capitalization, as defined therein. As of March 31, 2020, the Company was in compliance with all of the covenants of the Credit Agreement.

The following table shows our actual ratio performance with respect to the financial covenants as of March 31, 2020:

Covenant	Covenant Requirement	Actual Ratio
Consolidated interest coverage	3.50 to 1.00 (minimum)	18.61 to 1.00
Consolidated debt to capital	55% (maximum)	30.9%

We continue to believe that we will maintain compliance with the financial and restrictive covenants in future periods. To the extent that we do not comply with the covenants under the Credit Agreement, this could reduce our liquidity and flexibility due to potential restrictions on borrowings available to us unless we are able to obtain waivers or modifications of the covenants.

Non-GAAP Financial Measures

The following provides additional information regarding certain non-GAAP financial measures that we use in this report. Our definitions and calculations of these items may not necessarily be the same as those used by other companies.

Net Sales and Gross Margin Excluding Surcharge Revenue and Special Items

This report includes discussions of net sales as adjusted to exclude the impact of raw material surcharge and the resulting impact on gross margins, which represent financial measures that have not been determined in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). We present and discuss these financial measures because management believes removing the impact of raw material surcharge from net sales and cost of sales provides a more consistent basis for comparing results of operations from period to period for the reasons discussed earlier in this report. Management uses its results excluding these amounts to evaluate its operating performance and to discuss its business with investment institutions, our board of directors and others. See our earlier discussion of "Gross Profit" for a reconciliation of net sales and gross margin, excluding surcharge revenue and special items, to net sales as determined in accordance with U.S. GAAP. Net sales and gross margin excluding surcharge revenue and special items is not a U.S. GAAP financial measure and should not be considered in isolation of, or as a substitute for, net sales and gross margin calculated in accordance with U.S. GAAP.

Adjusted Operating Margin Excluding Surcharge Revenue and Special Items

This report includes discussions of operating margin as adjusted to exclude the impact of raw material surcharge revenue and special items which represent financial measures that have not been determined in accordance with U.S. GAAP. We present and discuss this financial measure because management believes removing the impact of raw material surcharge from net sales and cost of sales provides a more consistent and meaningful basis for comparing results of operations from period to period for the reasons discussed earlier in this report. In addition, management believes that excluding special items from operating margin is helpful in analyzing our operating performance, as these items are not indicative of ongoing operating performance. Management uses its results excluding these amounts to evaluate its operating performance and to discuss its business with investment institutions, our board of directors and others. See our earlier discussion of operating income for a reconciliation of operating income and operating margin excluding surcharge revenue and special items to operating income and operating margin determined in accordance with U.S. GAAP. Operating margin excluding surcharge revenue is not a U.S. GAAP financial measure and should not be considered in isolation of, or as a substitute for, operating margin calculated in accordance with U.S. GAAP.

Adjusted Earnings Per Share

The following provides a reconciliation of adjusted earnings per share, to its most directly comparable U.S. GAAP financial measures:

($ in millions, except per share amounts)	Income Before Income Taxes	Income Tax Expense	Net Income	Earnings Per Diluted Share*
Three months ended March 31, 2020, as reported	$ 49.9	$ (10.0)	$ 39.9	$ 0.82
Special item:				
None reported	—	—	—	—
Three months ended March 31, 2020, as adjusted	$ 49.9	$ (10.0)	$ 39.9	$ 0.82

* Impact per diluted share calculated using weighted average common shares outstanding of 48.3 million for the three months ended March 31, 2020.

($ in millions, except per share amounts)	Income Before Income Taxes	Income Tax Expense	Net Income	Earnings Per Diluted Share*
Three months ended March 31, 2019, as reported	$ 68.0	$ (16.9)	$ 51.1	$ 1.05
Special item:				
None reported	—	—	—	—
Three months ended March 31, 2019, as adjusted	$ 68.0	$ (16.9)	$ 51.1	$ 1.05

* Impact per diluted share calculated using weighted average common shares outstanding of 48.1 million for the three months ended March 31, 2019.

($ in millions, except per share amounts)	Income Before Income Taxes	Income Tax Expense	Net Income	Earnings Per Diluted Share*
Nine months ended March 31, 2020, as reported	$ 154.5	$ (34.6)	$ 119.9	$ 2.46
Special item:				
Restructuring charges	2.3	(0.5)	1.8	0.04
Nine months ended March 31, 2020, as adjusted	$ 156.8	$ (35.1)	$ 121.7	$ 2.50

* Impact per diluted share calculated using weighted average common shares outstanding of 48.4 million for the nine months ended March 31, 2020.

($ in millions, except per share amounts)	Income Before Income Taxes	Income Tax Expense	Net Income	Earnings Per Diluted Share*
Nine months ended March 31, 2019, as reported	$ 153.4	$ (35.3)	$ 118.1	$ 2.43
Special item:				
Acquisition-related costs	1.2	—	1.2	0.03
Nine months ended March 31, 2019, as adjusted	$ 154.6	$ (35.3)	$ 119.3	$ 2.46

* Impact per diluted share calculated using weighted average common shares outstanding of 48.1 million for the nine months ended March 31, 2019.

Management believes that the presentation of earnings per share adjusted to exclude special items is helpful in analyzing the operating performance of the Company, as these items are not indicative of ongoing operating performance. Our definitions and calculations of these items may not necessarily be the same as those used by other companies. Management uses its results excluding these amounts to evaluate its operating performance and to discuss its business with investment institutions, our Board of Directors and others. Adjusted earnings per share is not a U.S. GAAP financial measure and should not be considered in isolation of, or as a substitute for, earnings per share calculated in accordance with U.S. GAAP.

Free Cash Flow

The following provides a reconciliation of free cash flow, as used in this report, to its most directly comparable U.S. GAAP financial measures:

	Nine Months Ended March 31,	
($ in millions)	2020	2019
Net cash provided from operating activities	$ 94.9	$ 57.2
Purchases of property, plant, equipment and software	(144.0)	(130.7)
Proceeds from disposals of property, plant and equipment and assets held for sale	0.3	0.3
Acquisition of business, net of cash acquired	—	(79.0)
Dividends paid	(29.1)	(28.9)
Proceeds from insurance recovery	—	11.4
Free cash flow	$ (77.9)	$ (169.7)

Management believes that the presentation of free cash flow provides useful information to investors regarding our financial condition because it is a measure of cash generated which management evaluates for alternative uses. It is management’s current intention to use excess cash to fund investments in capital equipment, acquisition opportunities and consistent dividend payments. Free cash flow is not a U.S. GAAP financial measure and should not be considered in isolation of, or as a substitute for, cash flows calculated in accordance with U.S. GAAP.

Contingencies

Environmental

We are subject to various federal, state, local and international environmental laws and regulations relating to pollution, protection of public health and the environment, natural resource damages and occupational safety and health. Although compliance with these laws and regulations may affect the costs of our operations, compliance costs to date have not been material. We have environmental remediation liabilities at some of our owned operating facilities and have been designated as a PRP with respect to certain third party Superfund waste-disposal sites and other third party-owned sites. We accrue amounts for environmental remediation costs that represent our best estimate of the probable and reasonably estimable future costs related to environmental remediation. During the nine months ended March 31, 2020, the Company decreased the liability for a Company-owned former operating site by $0.1 million. The liabilities recorded for environmental remediation costs at Superfund sites, other third party-owned sites and Carpenter-owned current or former operating facilities remaining at March 31, 2020 and June 30, 2019 were $16.0 million and $16.1 million, respectively. Additionally, we have been notified that we may be a PRP with respect to other Superfund sites as to which no proceedings have been instituted against us. Neither the exact amount of remediation costs nor the final method of their allocation among all designated PRPs at these Superfund sites have been determined. Accordingly, at this time, we cannot reasonably estimate expected costs for such matters. The liability for future environmental remediation costs that can be reasonably estimated is evaluated on a quarterly basis.

Estimates of the amount and timing of future costs of environmental remediation requirements are inherently imprecise because of the continuing evolution of environmental laws and regulatory requirements, the availability and application of technology, the identification of currently unknown remediation sites and the allocation of costs among the PRPs. Based upon information currently available, such future costs are not expected to have a material effect on our financial position, results of operations or cash flows over the long-term. However, such costs could be material to our financial position, results of operations or cash flows in a particular future quarter or year.

Other

We are defending various routine claims and legal actions that are incidental to our business, and that are common to our operations, including those pertaining to product claims, commercial disputes, patent infringement, employment actions, employee benefits, compliance with domestic and foreign laws, personal injury claims and tax issues. Like many other manufacturing companies in recent years we, from time to time, have been named as a defendant in lawsuits alleging personal injury as a result of exposure to chemicals and substances in the workplace such as asbestos. We provide for costs relating to these matters when a loss is probable and the amount of the loss is reasonably estimable. The effect of the outcome of these matters on our future results of operations and liquidity cannot be predicted because any such effect depends on future results of operations and the amount and timing (both as to recording future charges to operations and cash expenditures) of the resolution of such matters. While it is not feasible to determine the outcome of these matters, we believe that the total liability from these matters will not have a material effect on our financial position, results of operations or cash flows over the long-term. However, there can be no assurance that an increase in the scope of pending matters or that any future lawsuits, claims, proceedings or investigations will not be material to our financial position, results of operations or cash flows in a particular future quarter or year.

Critical Accounting Policies and Estimates

A summary of other significant accounting policies is discussed in our 2019 Form 10-K Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations”, and in Note 1, Summary of Significant Accounting Policies, of the Notes to our consolidated financial statements included in Part II, Item 8 thereto.

Goodwill

Goodwill is not amortized but instead is at least annually tested for impairment as of June 30, or more frequently if events or circumstances indicate that the carrying amount of goodwill may be impaired. Potential impairment is identified by comparing the fair value of a reporting unit to its carrying value. The fair value is estimated using discounted cash flows and the use of market multiples valuation techniques. If the carrying value of the reporting unit exceeds its fair value, any impairment loss is measured by comparing the carrying value of the reporting unit’s goodwill to its implied fair value. The discounted cash flow analysis for each reporting unit tested requires significant estimates and assumptions related to cash flow forecasts, discount rates, terminal values and income tax rates. The cash flow forecasts include significant judgments and assumptions relating to revenue growth rates. The cash flow forecasts are developed based on assumptions about each reporting unit’s markets, product offerings, pricing, capital expenditure and working capital requirements as well as cost performance.

The discount rates used in the discounted cash flow are estimated based on a market participant’s perspective of each reporting unit's weighted average cost of capital. The terminal value, which represents the value attributed to the reporting unit beyond the forecast period, is estimated using a perpetuity growth rate assumption. The income tax rates used in the discounted cash flow analysis represent estimates of the long-term statutory income tax rates for each reporting unit based on the jurisdictions in which the reporting units operate.

As of March 31, 2020, we had five reporting units with goodwill recorded. Goodwill associated with our SAO reporting unit is tested at the SAO segment level and represents approximately 60 percent of our total goodwill. All other goodwill is associated with our PEP segment, which includes four reporting units with goodwill recorded.

As of June 30, 2019, the fair value of the SAO reporting unit exceeded the carrying value by approximately 32 percent. The goodwill recorded related to the SAO reporting unit as of June 30, 2019 was $195.5 million. The discounted cash flows analysis for the SAO reporting unit includes assumptions related to our ability to increase volume, improve mix, expand product offerings and continue to implement opportunities to reduce costs over the next several years. For purposes of the discounted cash flow analysis for SAO’s fair value, we used a weighted average cost capital of 10 percent and a terminal growth rate assumption of 3 percent.

As of June 30, 2019, the fair value of Carpenter Powder Products (“Powders”) exceeded the carrying value by 8 percent. The goodwill recorded related to Powders as of June 30, 2019 was $22.0 million. The discounted cash flows analysis for the Powders reporting unit includes assumptions related to our ability to increase volume, improve mix, expand product offerings and implement opportunities to reduce costs over the next several years. For purposes of the discounted cash flow analysis for the Powders reporting unit's fair value, we used a weighted average cost capital of 14.5 percent and a terminal growth rate assumption of 3 percent.

On July 1, 2019, the Company reorganized certain business units within our PEP segment. The LPW, CalRAM and Powder businesses in Alabama and West Virginia were combined to create the Carpenter Additive reporting unit. The Powders reporting unit remains but now excludes the Alabama and West Virginia sites. As a result, the Company performed an interim goodwill impairment test as of July 1, 2019 for the reporting units impacted by the reorganization noting the fair value exceeded the carrying value in all instances.

The estimate of fair value requires significant judgment. We based our fair value estimates on assumptions that we believe to be reasonable but that are unpredictable and inherently uncertain, including estimates of future growth rates and operating margins and assumptions about the overall economic climate and the competitive environment for our business units. There can be no assurance that our estimates and assumptions made for purposes of our goodwill and identifiable intangible asset testing as of the time of testing will prove to be accurate predictions of the future. If our assumptions regarding business projections, competitive environments or anticipated growth rates are not correct, or if market conditions were to change, including as a result of the current COVID-19 pandemic, we may be required to record goodwill and/or intangible asset impairment charges in future periods, whether in connection with our next annual impairment testing or earlier, if an indicator of an impairment is present before our next annual evaluation.

Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the Private Securities Litigation Act of 1995. These forward-looking statements are subject to risks and uncertainties that could cause actual results to differ from those projected, anticipated or implied. The most significant of these uncertainties are described in Carpenter Technology's filings with the Securities and Exchange Commission, including its report on Form 10-K for the year ended June 30, 2019, Form 10-Q for the quarters ended September 30, 2019 and December 31, 2019, and the exhibits attached to those filings. They include but are not limited to: (1) the cyclical nature of the specialty materials business and certain end-use markets, including aerospace, defense, medical, transportation, energy, industrial and consumer, or other influences on Carpenter Technology's business such as new competitors, the consolidation of competitors, customers, and suppliers or the transfer of manufacturing capacity from the United States to foreign countries; (2) the ability of Carpenter Technology to achieve cash generation, growth, earnings, profitability, operating income, cost savings and reductions, qualifications, productivity improvements or process changes; (3) the ability to recoup increases in the cost of energy, raw materials, freight or other factors; (4) domestic and foreign excess manufacturing capacity for certain metals; (5) fluctuations in currency exchange rates; (6) the effect of government trade actions; (7) the valuation of the assets and liabilities in Carpenter Technology's pension trusts and the accounting for pension plans; (8) possible labor disputes or work stoppages; (9) the potential that our customers may substitute alternate materials or adopt different manufacturing practices that replace or limit the suitability of our products; (10) the ability to successfully acquire and integrate acquisitions; (11) the availability of credit facilities to Carpenter Technology, its customers or other members of the supply chain; (12) the ability to obtain energy or raw materials, especially from suppliers located in countries that may be subject to unstable political or economic conditions; (13) Carpenter Technology's manufacturing processes are dependent upon highly specialized equipment located primarily in facilities in Reading and Latrobe, Pennsylvania and Athens, Alabama for which there may be limited alternatives if there are significant equipment failures or a catastrophic event; (14) the ability to hire and retain key personnel, including members of the executive management team, management, metallurgists and other skilled personnel; (15) fluctuations in oil and gas prices and production; (16) uncertainty regarding the return to service of the Boeing 737 MAX aircraft and the related supply chain disruption; (17) potential impacts of the COVID-19 pandemic on our operations, financial results and financial position; and (18) our ability to successfully carry out restructuring and business exit activities on the expected terms and time lines. Any of these factors could have an adverse and/or fluctuating effect on Carpenter Technology's results of operations. The forward-looking statements in this document are intended to be subject to the safe harbor protection provided by Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended. Carpenter Technology undertakes no obligation to update or revise any forward-looking statements.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We use derivative financial instruments to reduce certain types of financial risk. Firm price sales arrangements involve a risk of profit margin fluctuations particularly as raw material prices have been volatile. As discussed in Note 14 to the consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, "Financial Statements", in order to reduce the risk of fluctuating profit margins on these sales, we enter into commodity forward contracts to purchase certain critical raw materials necessary to produce the products sold under the firm price sales arrangements. If a customer fails to perform its obligations under the firm price sales arrangements, we may realize losses as a result of the related commodity forward contracts. As of March 31, 2020, we had approximately $17.4 million of net deferred losses related to commodity forward contracts to purchase certain raw materials. A large portion of this balance is related to commodity forward contracts to support firm price sales arrangements associated with many customers. However, approximately 60 percent of these net deferred losses relate to commodity forward contracts entered into to support sales under firm price sales arrangements with one customer in addition to the credit already extended to this customer in connection with outstanding trade receivables. Our customers have historically performed under these arrangements, and we believe that they will honor such obligations in the future.

We are actively involved in managing risks associated with energy resources. Risk containment strategies include interaction with primary and secondary energy suppliers as well as obtaining adequate insurance coverage to compensate us for potential business interruption related to lack of availability of energy resources. In addition, we have used forwards and options to fix the price of a portion of our anticipated future purchases of certain energy requirements to protect against the impact of significant increases in energy costs. We also use surcharge mechanisms to offset a portion of these charges where appropriate.

Fluctuations in foreign currency exchange rates could subject us to risk of losses on anticipated future cash flows from our international operations or customers. Foreign currency forward contracts are used to hedge certain foreign exchange risks.

We use interest rate swaps to achieve a level of floating rate debt relative to fixed rate debt where appropriate. Historically, we have entered into forward interest rate swap contracts to manage the risk of cash flow variability associated with fixed interest debt expected to be issued.

All hedging strategies are reviewed and approved by senior financial management before being implemented. Senior financial management has established policies regarding the use of derivative instruments that prohibit the use of speculative or leveraged derivatives. Market valuations are performed at least quarterly to monitor the effectiveness of our risk management programs.

Based on the current funding level, the allocation policy for pension plan assets is to have approximately 60 percent in return seeking assets and 40 percent in liability matching assets. Return seeking assets include domestic and international equities and diversified loan funds. Liability matching assets include long duration bond funds.

The status of our financial instruments as of March 31, 2020 is provided in Note 14 to the consolidated financial statements included in Part I, Item 1, "Financial Statements" of this Quarterly Report on Form 10-Q. Assuming either of the following occurred on March 31, 2020, (a) an instantaneous 10 percent decrease in the price of raw materials and energy for which we have commodity forward contracts, or (b) a 10 percent strengthening of the U.S. dollar versus foreign currencies for which foreign exchange forward contracts existed, our results of operations would not have been materially affected in either scenario.

Item 4. Controls and Procedures

(a) Evaluation of Effectiveness of Disclosure Controls and Procedures

The Company's management, with the participation of the Company's President and Chief Executive Officer and Vice President and Chief Financial Officer, evaluated the effectiveness of the Company's disclosure controls and procedures as defined in Rules 13a—15(e) and 15d—15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of March 31, 2020. Based on that evaluation, the President and Chief Executive Officer and Vice President and Chief Financial Officer, concluded that the Company's disclosure controls and procedures as of March 31, 2020 were not effective in providing a reasonable level of assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods required under the Securities and Exchange Commission's rules and forms, including a reasonable level of assurance that information required to be disclosed by us in such reports is accumulated and communicated to the Company's management, including the Company's President and Chief Executive Officer and Vice President and Chief Financial Officer, because of the material weakness in internal control over financial reporting disclosed in Item 8. of the 2019 Form 10-K under the caption "Management's Report on Internal Control Over Financial Reporting."

(b) Changes in Internal Control over Financial Reporting

Other than the changes in connection with our implementation of the remediation plan discussed below, there have been no other no changes in the Company's internal control over financial reporting that occurred during the quarter ended March 31, 2020 that have materially affected, or are likely to materially affect, the Company's internal control over financial reporting.

Remediation Plan

As disclosed in Item 8. of the 2019 Form 10-K under the caption "Management's Report on Internal Control Over Financial Reporting", we identified a material weakness related to the accuracy and completeness of the data inputs for price, quantity and related customer data during the billing process. There were no misstatements identified in our annual or interim consolidated financial statements. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis.

We have implemented changes to our internal control over financial reporting by enhancing the design of controls over the billing process to remediate the control deficiency that led to the material weakness. In carrying out our remediation plan, management designed and implemented new controls related to the accuracy and completeness of price, quantity and related customer data during the billing process and we are in the process of testing the operating effectiveness of these controls. Although we believe that the remediated controls have been effective to date, the material weakness will not be considered remediated until the applicable controls operate for a sufficient period of time and management has concluded, through testing, that these controls are operating effectively.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings

Pending legal proceedings involve ordinary routine litigation incidental to our business, which we do not believe would have a material adverse effect on our business regardless of their outcome. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Contingencies."

Item 1A. Risk Factors

We have evaluated the risks associated with our business and operations and determined that those risk factors included in Part 1, Item 1A of our 2019 Annual Report on Form 10-K, and the risk set forth below, adequately disclose the material risks that we face.

Our results of operations have been adversely affected and could in the future be materially adversely impacted by the coronavirus disease 2019 (COVID-19) pandemic.

The global spread of the COVID-19 pandemic has created significant economic volatility, uncertainty and disruption. The extent to which the COVID-19 pandemic impacts our business, operations and financial results will depend on numerous evolving factors that we may not be able to accurately predict, including: the duration and scope of the pandemic; governmental, business and individuals' actions that have been and continue to be taken in response to the pandemic; the impact of the pandemic on economic activity and actions taken in response; the effect on our customers' demand for our goods and services and our vendors ability to supply us with raw materials; our ability to sell and provide our goods and services, which may be limited as a result of travel restrictions and people working from home; the ability of our customers to pay for our goods and services; and any closures of our offices and facilities and our customers' offices and facilities. Customers may also slow down decision-making, delay planned work or seek to terminate existing agreements.

Further, the effects of the pandemic may also increase our cost of capital or make additional capital, including a future refinancing of our credit facility, more difficult to obtain or available only on terms less favorable to us. A sustained downturn may also result in the carrying value of our goodwill or other intangible assets exceeding their fair value, which may require us to recognize an impairment to those assets. A sustained downturn in the financial markets and asset values may have the effect of increasing our pension funding obligations in order to ensure that our qualified pension plans continue to be adequately funded, which may divert cash flow from other uses.

Cyber-attacks and other malicious internet-based activity continue to increase generally, and cloud-based platform providers of software and services have been targeted. Due to the COVID-19 pandemic, many of our employees are temporarily working remotely, which may pose additional data security risks.

Management is actively monitoring the impact of the global situation on our financial condition, liquidity, operations, suppliers, industry, and workforce. Given the daily evolution of the COVID-19 pandemic and the global responses to curb its spread, the Company is not able to estimate the effects of the COVID-19 pandemic on its results of operations, financial condition, or liquidity for fiscal year 2020. Any of these events could cause or contribute to the risks and uncertainties enumerated in the Annual Report and could materially adversely affect our business, financial condition, results of operations and/or stock price.

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

There were no reportable purchases during the quarter ended March 31, 2020, however employees surrendered 3,012 shares to the Company, at an average purchase price of $39.58, during such quarter for the payment of the minimum tax liability withholding obligations upon the vesting of shares of restricted stock and the exercise of options. We do not consider this a share buyback program.

Item 6. Exhibits

Exhibit No.	Description
31 (A)	Certification of President and Chief Executive Officer pursuant to Rule 13a—14(a) and Rule 15d—14(a) of the Securities Exchange Act, as amended. (filed herewith)
31 (B)	Certification of Vice President and Chief Financial Officer pursuant to Rule 13a—14(a) and Rule 15d—14(a) of the Securities Exchange Act, as amended. (filed herewith)
32	Certification of President and Chief Executive Officer and Vice President and Chief Financial Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. (filed herewith)
101	The following financial information from this Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2020, formatted in Inline XBRL (Extensible Business Reporting Language) and filed electronically herewith: (i) the Consolidated Balance Sheets; (ii) the Consolidated Statements of Income; (iii) the Consolidated Statements of Comprehensive Income; (iv) the Consolidated Statements of Cash Flows; (v) the Consolidated Statements of Changes in Equity; and (vi) the Notes to the Consolidated Financial Statements.

SIGNATURE

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

	Carpenter Technology Corporation
	(Registrant)
Date: April 30, 2020	/s/ Timothy Lain
	Timothy Lain
	Vice President and Chief Financial Officer
	(Principal Financial Officer)

Exhibit 31 (A)

CERTIFICATIONS OF PERIODIC REPORTS PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Tony R. Thene, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q (the "Report") of Carpenter Technology Corporation (the "Registrant");

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 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 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 30, 2020

/s/ Tony R. Thene

Tony R. Thene

President and Chief Executive Officer

Exhibit 31 (B)

CERTIFICATIONS OF PERIODIC REPORTS PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Timothy Lain, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q (the "Report") of Carpenter Technology Corporation (the "Registrant");

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 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 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 30, 2020

/s/ Timothy Lain

Timothy Lain
Vice President and Chief Financial Officer

Exhibit 32

**CERTIFICATION OF PERIODIC FINANCIAL REPORTS 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 Carpenter Technology Corporation (the “Issuer”) on Form 10-Q for the quarter ended March 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the “Periodic Report”), I, Tony R. Thene, and I, Timothy Lain, each hereby certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Periodic Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and that information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Issuer.

Date: April 30, 2020

/s/ Tony R. Thene	/s/ Timothy Lain
Tony R. Thene	Timothy Lain
President and Chief Executive Officer	Vice President and Chief Financial Officer