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

FORM 10-Q

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

For the quarter ended June 30, 2019
or

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

Commission File No. 1-15579

MSA SAFETY INCORPORATED
(Exact name of registrant as specified in its charter)

Pennsylvania	**46-4914539**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**
1000 Cranberry Woods Drive	
Cranberry Township, Pennsylvania	**16066-5207**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (724) 776-8600

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 and (2) has been subject to such filing requirements for the past 90 days. Yes x No ☐

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

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

Large Accelerated Filer	☒	Accelerated filer	☐	Non-accelerated filer	☐	Smaller reporting company	☐
						Emerging growth company	☐

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No x

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

Title of each class	Trading Symbol(s)	Name of each exchange on which is registered
Common Stock, $0.00 par value	MSA	New York Stock Exchange

As of July 18, 2019, 38,719,169 shares of common stock, of the registrant were outstanding.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED STATEMENT OF INCOME

Unaudited

	Three Months Ended June 30,		Six Months Ended June 30,	
(In thousands, except per share amounts)	**2019**	**2018**	**2019**	**2018**
Net sales	$ 349,675	$ 339,331	$ 675,713	$ 665,225
Cost of products sold	188,591	185,495	364,647	364,050
Gross profit	161,084	153,836	311,066	301,175
Selling, general and administrative	84,009	81,962	162,437	162,213
Research and development	14,256	13,909	27,962	26,456
Restructuring charges (Note 4)	3,522	2,335	9,353	7,609
Currency exchange losses, net (Note 6)	1,290	815	18,251	2,823
Product liability expense (Note 18)	3,529	8,018	6,425	10,842
Operating income	54,478	46,797	86,638	91,232
Interest expense	4,470	5,181	6,830	9,962
Other income, net	(3,342)	(1,701)	(5,921)	(4,041)
Total other expense, net	1,128	3,480	909	5,921
Income before income taxes	53,350	43,317	85,729	85,311
Provision for income taxes (Note 10)	13,238	9,896	22,241	19,401
Net income	40,112	33,421	63,488	65,910
Net income attributable to noncontrolling interests	(306)	(242)	(450)	(360)
Net income attributable to MSA Safety Incorporated	$ 39,806	$ 33,179	$ 63,038	$ 65,550
Earnings per share attributable to MSA Safety Incorporated common shareholders:				
Basic	$ 1.03	$ 0.86	$ 1.63	$ 1.71
Diluted	$ 1.01	$ 0.85	$ 1.61	$ 1.69
Dividends per common share	$ 0.42	$ 0.38	$ 0.80	$ 0.73

The accompanying notes are an integral part of the consolidated financial statements.

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

Unaudited

	Three Months Ended June 30,		Six Months Ended June 30,	
(In thousands)	**2019**	**2018**	**2019**	**2018**
Net income	$ 40,112	$ 33,421	$ 63,488	$ 65,910
Other comprehensive income (loss), net of tax:				
Foreign currency translation adjustments (Note 6)	(385)	(27,880)	(24)	(14,480)
Pension and post-retirement plan actuarial gains, net of tax (Note 6)	1,378	3,059	3,401	5,388
Unrealized gains on available-for-sale securities (Note 6)	27	—	563	—
Reclassification of currency translation from accumulated other comprehensive (loss) into net income (Note 6)	—	(774)	15,359	(774)
Total other comprehensive income (loss), net of tax	1,020	(25,595)	19,299	(9,866)
Comprehensive income	41,132	7,826	82,787	56,044
Comprehensive (income) loss attributable to noncontrolling interests	(169)	31	(456)	(257)
Comprehensive income attributable to MSA Safety Incorporated	$ 40,963	$ 7,857	$ 82,331	$ 55,787

The accompanying notes are an integral part of the consolidated financial statements.

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED BALANCE SHEET

Unaudited

(In thousands)	**June 30, 2019**	**December 31, 2018**
Assets		
Cash and cash equivalents	$ 111,511	$ 140,095
Trade receivables, less allowance for doubtful accounts of $5,545 and $5,369	256,666	245,032
Inventories (Note 3)	187,779	156,602
Investments, short-term (Note 17)	72,461	55,106
Prepaid income taxes	13,751	10,769
Notes receivable, insurance companies (Note 18)	3,616	3,555
Prepaid expenses and other current assets	41,850	45,464
Total current assets	687,634	656,623
Property, plant and equipment, net (Note 5)	158,047	157,940
Operating lease assets, net (Note 14)	50,935	—
Prepaid pension cost	64,987	57,568
Deferred tax assets (Note 10)	30,153	32,522
Goodwill (Note 13)	433,156	413,640
Intangible assets (Note 13)	175,263	169,515
Notes receivable, insurance companies, noncurrent (Note 18)	56,724	56,012
Insurance receivable (Note 18) and other noncurrent assets	56,957	64,192
Total assets	$ 1,713,856	$ 1,608,012
Liabilities		
Notes payable and current portion of long-term debt, net (Note 12)	$ 20,127	$ 20,063
Accounts payable	73,264	78,367
Employees’ compensation	36,171	51,386
Insurance and product liability (Note 18)	23,898	48,688
Income taxes payable (Note 10)	9,815	—
Warranty reserve (Note 18) and other current liabilities	94,242	83,556
Total current liabilities	257,517	282,060
Long-term debt, net (Note 12)	378,380	341,311
Pensions and other employee benefits	168,340	166,101
Noncurrent operating lease liabilities (Note 14)	40,710	—
Deferred tax liabilities (Note 10)	10,986	7,164
Product liability (Note 18) and other noncurrent liabilities	166,776	171,857
Total liabilities	$ 1,022,709	$ 968,493
Commitments and contingencies (Note 18)		
Equity		
Preferred stock, 4 1/2% cumulative, $50 par value (Note 7)	$ 3,569	$ 3,569
Common stock, no par value (Note 7)	218,801	211,806
Treasury shares, at cost (Note 7)	(305,363)	(298,143)
Accumulated other comprehensive loss (Note 6)	(203,406)	(218,927)
Retained earnings	971,453	935,577
Total MSA Safety Incorporated shareholders' equity	685,054	633,882
Noncontrolling interests	6,093	5,637
Total shareholders’ equity	691,147	639,519
Total liabilities and shareholders’ equity	$ 1,713,856	$ 1,608,012

The accompanying notes are an integral part of the consolidated financial statements.

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

Unaudited

(In thousands)	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Operating Activities		
Net income	$ 63,488	$ 65,910
Depreciation and amortization	18,792	19,207
Stock-based compensation (Note 11)	6,086	7,692
Pension expense (Note 15) and other charges	2,856	2,976
Deferred income tax provision (benefit) (Note 10)	849	(2,626)
Loss on asset dispositions, net	233	1,148
Pension contributions (Note 15)	(3,534)	(2,486)
Currency exchange losses, net	18,251	2,823
Product liability expense (Note 18)	6,425	10,842
Collections on insurance receivables and notes receivable, insurance companies (Note 18)	11,289	20,028
Product liability payments (Note 18)	(34,170)	(27,700)
Changes in:		
Trade receivables	(9,189)	(1,897)
Inventories (Note 3)	(25,421)	(29,257)
Prepaid expenses and other current assets	(3,489)	9,509
Accounts payable and accrued liabilities	(13,401)	1,601
Other noncurrent assets and liabilities	(1,520)	(12,388)
Cash Flow From Operating Activities	37,545	65,382
Investing Activities		
Capital expenditures	(13,525)	(8,812)
Acquisition, net of cash acquired (Note 19)	(33,196)	—
Purchase of short-term investments (Note 17)	(87,260)	—
Proceeds from maturities of short-term investments (Note 17)	69,958	—
Property disposals	81	3,059
Cash Flow Used in Investing Activities	(63,942)	(5,753)
Financing Activities		
Payments on short-term debt, net	64	215
Proceeds from long-term debt (Note 12)	375,000	248,500
Payments on long-term debt (Note 12)	(338,000)	(291,000)
Cash dividends paid	(30,934)	(27,981)
Company stock purchases (Note 7)	(10,967)	(3,835)
Exercise of stock options (Note 7)	3,232	4,293
Employee stock purchase plan (Note 7)	344	280
Cash Flow Used in Financing Activities	(1,261)	(69,528)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(985)	(8,130)
Decrease in cash, cash equivalents and restricted cash	(28,643)	(18,029)
Beginning cash, cash equivalents and restricted cash	140,604	137,889
Ending cash, cash equivalents and restricted cash	$ 111,961	$ 119,860
Supplemental cash flow information:		
Cash and cash equivalents	$ 111,511	$ 116,650
Restricted cash included in prepaid expenses and other current assets	450	3,210
Total cash, cash equivalents and restricted cash	$ 111,961	$ 119,860

The accompanying notes are an integral part of the consolidated financial statements.

MSA SAFETY INCORPORATED

CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN RETAINED EARNINGS, ACCUMULATED OTHER COMPREHENSIVE LOSS AND NONCONTROLLING INTERESTS

Unaudited

(In thousands)	Retained Earnings	Accumulated Other Comprehensive (Loss)	Noncontrolling Interests
Balances March 31, 2018	$ 887,656	$ (156,203)	$ 5,265
Net income	33,421	—	—
Foreign currency translation adjustments	—	(27,880)	—
Pension and post-retirement plan adjustments, net of tax of $614	—	3,059	—
Reclassification from accumulated other comprehensive (loss) into net income	—	(774)	—
Income attributable to noncontrolling interests	(242)	273	(31)
Common dividends	(14,581)	—	—
Preferred dividends ($0.5625 per share)	(10)	—	—
Balances June 30, 2018	$ 906,244	$ (181,525)	$ 5,234
Balances March 31, 2019	$ 947,929	$ (204,563)	$ 5,924
Net income	40,112	—	—
Foreign currency translation adjustments	—	(385)	—
Pension and post-retirement plan adjustments, net of tax of $1,384	—	1,378	—
Unrealized net gains on available-for-sale securities (Note 17)	—	27	—
Income attributable to noncontrolling interests	(306)	137	169
Common dividends	(16,272)	—	—
Preferred dividends ($0.5625 per share)	(10)	—	—
Balances June 30, 2019	$ 971,453	$ (203,406)	$ 6,093
Balances December 31, 2017	$ 868,675	$ (171,762)	$ 4,977
Net income	65,910	—	—
Foreign currency translation adjustments	—	(14,480)	—
Pension and post-retirement plan adjustments, net of tax of $1,682	—	5,388	—
Reclassification from accumulated other comprehensive (loss) into net income	—	(774)	—
Income attributable to noncontrolling interests	(360)	103	257
Common dividends	(27,961)	—	—
Preferred dividends ($0.5625 per share)	(20)	—	—
Balances June 30, 2018	$ 906,244	$ (181,525)	$ 5,234
Balances December 31, 2018	$ 935,577	$ (218,927)	$ 5,637
Net income	63,488	—	—
Foreign currency translation adjustments	—	(24)	—
Pension and post-retirement plan adjustments, net of tax of $2,050	—	3,401	—
Unrealized net gains on available-for-sale securities (Note 17)	—	563	—
Reclassification of currency translation from accumulated other comprehensive (loss) into net income (Note 6)	—	15,359	—
Income attributable to noncontrolling interests	(450)	(6)	456
Common dividends	(30,914)	—	—
Preferred dividends ($0.5625 per share)	(20)	—	—
Reclassification due to the adoption of ASU 2018-02 (Note 2)	3,772	(3,772)	—
Balances June 30, 2019	$ 971,453	$ (203,406)	$ 6,093

The accompanying notes are an integral part of the consolidated financial statements.

Note 1—Basis of Presentation

The condensed consolidated financial statements of MSA Safety Incorporated and its subsidiaries ("MSA" or the "Company") are unaudited. These condensed consolidated financial statements include all adjustments, consisting of normal recurring adjustments, considered necessary by management to fairly state the Company's results. Intercompany accounts and transactions have been eliminated. The results reported in these condensed consolidated financial statements are not necessarily indicative of the results that may be expected for the entire year. The December 31, 2018 Condensed Consolidated Balance Sheet data was derived from the audited consolidated balance sheet, but does not include all disclosures required by accounting principles generally accepted in the United States of America (U.S. GAAP). This Form 10-Q report should be read in conjunction with MSA's Form 10-K for the year ended December 31, 2018, which includes all disclosures required by U.S. GAAP.

Reclassifications - Certain reclassifications of prior years' data have been made to conform to the current year presentation. These reclassifications relate to (1) additional captions disclosed within the operating section of the unaudited Condensed Consolidated Statement of Cash Flows but do not change the overall cash flow from operating activities for the prior years as previously reported, and (2) additional captions disclosed for product warranty activity within the table that reconciles the changes in the Company's accrued warranty reserve (Note 18—Contingencies).

Note 2—Recently Adopted and Recently Issued Accounting Standards

In February 2016, the FASB issued ASU 2016-02, *Leases*. This ASU requires lessees to record a right-of-use asset and a liability for virtually all leases. This ASU was adopted on January 1, 2019, using the modified retrospective transition method at the adoption date. Comparative periods presented in our unaudited condensed consolidated financial statements are reported in accordance with ASC 840, Leases. In addition, the Company elected the package of practical expedients permitted under the transition guidance within the new standard, which among other things, allowed us to carry forward the historical lease classification. The Company also elected the practical expedient to not separate lease and non-lease components for new leases entered into after January 1, 2019 when calculating the lease liability under this ASU. Adoption of this ASU resulted in the recording of lease liabilities of approximately $54 million with the offset to lease right-of-use assets of $54 million. The standard did not materially impact our unaudited Condensed Consolidated Statement of Income and had no impact on our unaudited Condensed Consolidated Statement of Cash Flows. The new standard also requires increased disclosures to help financial statement users better understand the amount, timing and uncertainty of cash flows arising from leases. See additional disclosures in Note 14—Leases.

In June 2016, the FASB issued ASU 2016-13, *Allowance for Loan and Lease Losses.* This ASU introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments, including loans, held-to-maturity debt securities, loan commitments, financial guarantees and net investments in leases, as well as reinsurance and trade/other receivables. This ASU will be effective beginning in 2020. Based on a review of its portfolio of financial instruments, the Company has developed a project plan and is in the process of assessing the impact that this ASU will have on our reserve for trade receivables as recorded in our unaudited Condensed Consolidated Balance Sheet. Additionally, we expect the adoption of this ASU to result in additional disclosures.

In January 2017, the FASB issued ASU 2017-04, *Simplifying the Test for Goodwill Impairment*. This ASU simplifies the accounting for goodwill impairments under Step 2 by eliminating the requirement to perform procedures to determine the fair value of the assets and liabilities of the reporting unit, including previously unrecognized assets and liabilities, in order to determine the fair value of the goodwill and any impairment charge to be recognized. Under this ASU, the impairment charge to be recognized should be the amount by which the reporting unit's carrying value exceeds the reporting unit's fair value as calculated under Step 1 provided that the loss recognized should not exceed the total amount of goodwill allocated to the reporting unit. The Company adopted ASU 2017-04 on January 1, 2019 and adoption of this ASU may have a material effect on our unaudited condensed consolidated financial statements in the event that we determine that goodwill for any of our reporting units is impaired.

In January 2018, the FASB issued ASU 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* ("AOCI"), which gives entities the option to reclassify to retained earnings the tax effects resulting from the new tax reform legislation commonly known as the Tax Cuts and Jobs Act ("the Act") related to items in AOCI that the FASB refers to as having been stranded in AOCI. The new guidance may be applied retrospectively to each period in which the effect of the Act is recognized in the period of adoption. ASU2018-02 requires new disclosures regarding the Company's accounting policy for releasing the tax effects in accumulated other comprehensive loss and allows the Company to reclassify the effect of remeasuring deferred tax liabilities and assets related to items within accumulated other comprehensive loss using the then newly enacted 21% federal corporate income tax rate. The Company adopted ASU 2018-02 on January 1, 2019 and this adoption resulted in a reclassification that increased retained earnings by $3.8 million, with an offsetting increase to accumulated other comprehensive loss for the same amount.

In August 2018, the FASB issued ASU 2018-13, *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement*, which improves fair value disclosure requirements by removing disclosures that are not cost beneficial, clarifying disclosures' specific requirements and adding relevant disclosure requirements. This ASU is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. Early adoption is permitted and an entity can choose to early adopt any removed or modified disclosures upon issuance of this ASU and delay adoption of the additional disclosures until their effective date. Based on a review of its portfolio of financial instruments, the Company does not believe the adoption of this ASU will have a material impact on the unaudited condensed consolidated financial statements but does expect changes to our disclosures.

In August 2018, the FASB issued ASU 2018-14, *Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans*, which improves defined benefit disclosure requirements by removing disclosures that are not cost beneficial, clarifying disclosures' specific requirements and adding relevant disclosure requirements. This ASU is effective for fiscal years ending after December 15, 2020 and early adoption is permitted. The amendments in this ASU are required to be applied on a retrospective basis to all periods presented. The Company is still evaluating the impact that the adoption of ASU 2018-14 will have on the unaudited condensed consolidated financial statements, but does expect changes to our disclosures.

In August 2018, the FASB issued ASU 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*, which will now allow all cloud computing arrangements classified as service contracts to capitalize certain implementation costs in accordance with ASC 350-40, *Intangibles - Goodwill and Other - Internal-Use Software*, depending on the project stage within which the costs were incurred. This ASU is effective for fiscal years beginning after December 15, 2019 and interim periods within those fiscal periods. Early adoption of the amendments in this ASU is permitted, including adoption in any interim period and the amendments can be applied either retrospectively or prospectively. In 2018, the Company adopted this ASU prospectively for all implementation costs incurred related to cloud computing arrangements and the implementation did not have a material impact on our unaudited condensed consolidated financial statements.

Note 3—Inventories

The following table sets forth the components of inventory:

(In thousands)	**June 30, 2019**	**December 31, 2018**
Finished products	$ 82,184	$ 65,965
Work in process	10,996	6,169
Raw materials and supplies	135,107	124,554
Inventories at current cost	228,287	196,688
Less: LIFO valuation	(40,508)	(40,086)
Total inventories	$ 187,779	$ 156,602

Note 4—Restructuring Charges

During the three and six months ended June 30, 2019, we recorded restructuring charges of $3.5 million and $9.4 million, respectively. International segment restructuring charges of $8.9 million during the six months ended June 30, 2019, were primarily related to severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth and a non-cash settlement charge for the closure of our pension plan in the United Kingdom. Corporate segment restructuring charges of $0.4 million during the six months ended June 30, 2019, were related primarily to the legal and operational realignment of our U.S. and Canadian operations.

During the three and six months ended June 30, 2018, we recorded restructuring charges of $2.3 million and $7.6 million, respectively. Americas segment restructuring charges of $0.6 million during the six months ended June 30, 2018, were related to severance costs for staff reductions in our Latin America Region. International segment restructuring charges of $3.5 million during the six months ended June 30, 2018, were primarily related to severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth in Europe. Corporate segment restructuring charges of $3.5 million during the six months ended June 30, 2018, were related primarily to the legal and operational realignment of our U.S. and Canadian operations.

Activity and reserve balances for restructuring charges by segment were as follows:

(In millions)	**Americas**	**International**	**Corporate**	**Total**
Reserve balances at December 31, 2017	$ 0.5	$ 3.6	$ —	$ 4.1
Restructuring charges	2.3	5.6	5.3	13.2
Currency translation and other adjustments	(0.3)	(0.3)	—	(0.6)
Cash payments	(2.0)	(4.9)	(5.3)	(12.2)
Reserve balances at December 31, 2018	$ 0.5	$ 4.0	$ —	$ 4.5
Restructuring charges	0.1	8.9	0.4	9.4
Currency translation and other adjustments	—	(0.4)	—	(0.4)
Cash payments/utilization	(0.2)	(5.6)	(0.4)	(6.2)
Reserve balances at June 30, 2019	$ 0.4	$ 6.9	$ —	$ 7.3

Note 5—Property, Plant and Equipment

The following table sets forth the components of property, plant and equipment:

(In thousands)	**June 30, 2019**	**December 31, 2018**
Land	$ 3,047	$ 3,188
Buildings	119,819	117,910
Machinery and equipment	393,327	386,690
Construction in progress	28,687	24,044
Total	544,880	531,832
Less: accumulated depreciation	(386,833)	(373,892)
Net property, plant and equipment	$ 158,047	$ 157,940

Note 6—Reclassifications Out of Accumulated Other Comprehensive Loss

We recognized non-cash cumulative translation losses of approximately $15.4 million, during the six months ended June 30, 2019, primarily as a result of the approval of our plan to close our South Africa affiliates. This charge is related to the historical translation of the elements of the financial statements for the business from the functional currency to the U.S. Dollar. The translation impact has been historically recorded as currency translation adjustment ("CTA"), a separate component of accumulated other comprehensive loss within the equity section of the unaudited Condensed Consolidated Balance Sheet and has been reclassified into net income during the six months ended June 30, 2019.

Changes in accumulated other comprehensive loss were as follows:

	MSA Safety Incorporated		Noncontrolling Interests	
	Three Months Ended June 30,		Three Months Ended June 30,	
(In thousands)	2019	2018	2019	2018
Pension and other post-retirement benefits [(a)]				
Balance at beginning of period	$ (117,266)	$ (95,619)	$ —	$ —
Amounts reclassified from accumulated other comprehensive loss into net income:				
Amortization of prior service credit (Note 15)	11	(131)	—	—
Recognized net actuarial losses (Note 15)	2,751	3,804	—	—
Tax benefit	(1,384)	(614)	—	—
Total amount reclassified from accumulated other comprehensive loss, net of tax, into net income	1,378	3,059	—	—
Balance at end of period	$ (115,888)	$ (92,560)	$ —	$ —
Available-for-sale securities				
Balance at beginning of period	(36)	—	—	—
Unrealized gains on available-for-sale securities (Note 17)	27	—	—	—
Balance at end of period	$ (9)	$ —	$ —	$ —
Foreign Currency Translation				
Balance at beginning of period	(87,261)	(60,584)	639	971
Reclassification from accumulated other comprehensive loss into net income	—	(774)	—	—
Foreign currency translation adjustments	$ (248)	$ (27,607)	$ (137)	$ (273)
Balance at end of period	$ (87,509)	$ (88,965)	$ 502	$ 698

(In thousands)	MSA Safety Incorporated Six Months Ended June 30, 2019	MSA Safety Incorporated Six Months Ended June 30, 2018	Noncontrolling Interests Six Months Ended June 30, 2019	Noncontrolling Interests Six Months Ended June 30, 2018
Pension and other post-retirement benefits [(a)]				
Balance at beginning of period	$ (115,517)	$ (97,948)	$ —	$ —
Amounts reclassified from accumulated other comprehensive loss into net income:				
Amortization of prior service credit (Note 15)	(94)	(213)	—	—
Recognized net actuarial losses (Note 15)	5,545	7,283	—	—
Tax benefit	(2,050)	(1,682)	—	—
Total amount reclassified from accumulated other comprehensive loss, net of tax, into net income	3,401	5,388	—	—
Reclassification to retained earnings due to the adoption of ASU 2018-02 (Note 2)	(3,772)	—	—	—
Balance at end of period	$ (115,888)	$ (92,560)	$ —	$ —
Available-for-sale securities				
Balance at beginning of period	$ (572)	$ —	$ —	$ —
Unrealized gains on available-for-sale securities (Note 17)	563	—	—	—
Balance at end of period	$ (9)	$ —	$ —	$ —
Foreign Currency Translation				
Balance at beginning of period	$ (102,838)	$ (73,814)	$ 496	$ 801
Reclassification from accumulated other comprehensive loss into net income	15,359 [(b)]	(774)	—	—
Foreign currency translation adjustments	(30)	(14,377)	6	(103)
Balance at end of period	$ (87,509)	$ (88,965)	$ 502	$ 698

[(a)] Reclassifications out of accumulated other comprehensive loss and into net income are included in the computation of net periodic pension and other post-retirement benefit costs (refer to Note 15—Pensions and Other Post-retirement Benefits).
[(b)] Reclassifications into net income relate primarily to the approval of our plan to close our South Africa affiliates as discussed above and are included in Currency exchange losses, net within the unaudited Condensed Consolidated Statement of Income.

Note 7—Capital Stock

Preferred Stock - The Company has authorized 100,000 shares of $50 par value 4.5% cumulative preferred nonvoting stock which is callable at $52.50. There are 71,340 shares issued and 52,878 shares held in treasury at June 30, 2019. The Treasury shares at cost line on the unaudited Condensed Consolidated Balance Sheet includes $1.8 million related to preferred stock. There were no treasury purchases of preferred stock during the six months ended June 30, 2019 or 2018. The Company has also authorized 1,000,000 shares of $10 par value second cumulative preferred voting stock. No shares have been issued as of June 30, 2019.

Common Stock - The Company has authorized 180,000,000 shares of no par value common stock. There were 62,081,391 shares issued as of December 31, 2018. No new shares were issued during the six months ended June 30, 2019 or 2018. There were 38,711,509 and 38,526,523 shares outstanding at June 30, 2019, and December 31, 2018, respectively.

Treasury Shares - The Company's share repurchase program authorizes up to $100.0 million to repurchase MSA common stock in the open market and in private transactions. The share purchase program has no expiration date. The maximum number of shares that may be purchased is calculated based on the dollars remaining under the program and the respective month-end closing share price. During the six months ended June 30, 2019, 33,465 shares were repurchased under this program. No shares were repurchased under the program during the six months ended June 30, 2018. We do not have any other share repurchase programs. There were 23,369,882 and 23,554,868 Treasury Shares at June 30, 2019, and December 31, 2018, respectively.

The Company issues Treasury Shares for all share based benefit plans. Shares are issued from Treasury at the average Treasury Share cost on the date of the transaction. There were 293,556 and 241,732 Treasury Shares issued for these purposes during the six months ended June 30, 2019 and 2018, respectively.

Common stock activity is summarized as follows:

	Three Months Ended June 30, 2019		Three Months Ended June 30, 2018	
(In thousands)	**Common Stock**	**Treasury Cost**	**Common Stock**	**Treasury Cost**
Balance at beginning of period	$ 213,099	$ (300,919)	$ 200,002	$ (297,350)
Stock compensation expense	3,340	—	2,085	—
Restricted and performance stock awards	(232)	232	(399)	399
Stock options exercised	1,372	395	2,246	1,200
Treasury shares purchased	—	(148)	—	(1,162)
Stock consideration in acquisition (Note 19)	921	—	—	—
Employee stock purchase program	301	43	237	43
Share repurchase program	—	(3,347)	—	—
Balance at end of period	$ 218,801	$ (303,744)	$ 204,171	$ (296,870)

	Six Months Ended June 30, 2019		Six Months Ended June 30, 2018	
(In thousands)	**Common Stock**	**Treasury Cost**	**Common Stock**	**Treasury Cost**
Balance at beginning of period	$ 211,806	$ (296,390)	$ 194,953	$ (296,081)
Stock compensation expense	6,086	—	7,692	—
Restricted and performance stock awards	(2,643)	2,643	(1,501)	1,501
Stock options exercised	2,330	902	2,790	1,502
Treasury shares purchased	—	(7,595)	—	(3,835)
Stock consideration in acquisition (Note 19)	921	—	—	—
Employee stock purchase program	301	43	237	43
Share repurchase program	—	(3,347)	—	—
Balance at end of period	$ 218,801	$ (303,744)	$ 204,171	$ (296,870)

Note 8—Segment Information

We are organized into six geographic operating segments based on management responsibilities. The operating segments have been aggregated (based on economic similarities, the nature of their products, end-user markets and methods of distribution) into three reportable segments: Americas, International, and Corporate.

The Americas segment is comprised of our operations in North America and Latin America geographies. The International segment is comprised of our operations of all geographies outside of the Americas. Certain global expenses are allocated to each segment in a manner consistent with where the benefits from the expenses are derived.

The Company's sales are allocated to each country based primarily on the destination of the end-customer.

Adjusted operating income (loss), adjusted operating margin, adjusted earnings before interest, taxes, depreciation and amortization (EBITDA) and adjusted EBITDA margin are the measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is defined as operating income excluding restructuring charges, currency exchange gains/losses, product liability expense and strategic transaction costs and adjusted operating margin is defined as adjusted operating income (loss) divided by segment sales to external customers. Adjusted EBITDA is defined as adjusted operating income (loss) plus depreciation and amortization and adjusted EBITDA margin is defined as adjusted EBITDA divided by segment sales to external customers. Adjusted operating income (loss), adjusted operating margin, adjusted EBITDA and adjusted EBITDA margin are not recognized terms under U.S. GAAP and therefore do not purport to be alternatives to operating income or operating margin as a measure of operating performance. Further, the Company's measure of adjusted operating income (loss), adjusted operating margin, adjusted EBITDA and adjusted EBITDA margin may not be comparable to similarly titled measures of other companies. Adjusted operating income (loss) and adjusted EBITDA on a consolidated basis is presented in the following table to reconcile the segment operating performance measure to operating income as presented on the unaudited Condensed Consolidated Statement of Income.

The accounting principles applied at the operating segment level in determining operating income (loss) are generally the same as those applied at the consolidated financial statement level. Sales and transfers between operating segments are accounted for at market-based transaction prices and are eliminated in consolidation.

Reportable segment information is presented in the following table:

(In thousands, except percentage amounts)	Americas	International	Corporate	Reconciling Items[1]	Consolidated Totals
Three Months Ended June 30, 2019					
Sales to external customers	$ 231,389	$ 118,286	$ —	$ —	$ 349,675
Intercompany sales	148,776	77,454	—	(226,230)	—
Operating income					54,478
Restructuring charges (Note 4)					3,522
Currency exchange losses, net (Note 6)					1,290
Product liability expense (Note 18)					3,529
Strategic transaction costs (Note 19)					1,529
Adjusted operating income (loss)	57,689	15,072	(8,413)	—	64,348
Adjusted operating margin %	24.9%	12.7%			
Depreciation and amortization					9,466
Adjusted EBITDA	63,842	18,288	(8,316)	—	73,814
Adjusted EBITDA %	27.6%	15.5%			
Six Months Ended June 30, 2019					
Sales to external customers	$ 445,076	$ 230,637	$ —	$ —	$ 675,713
Intercompany sales	308,038	156,783	—	(464,821)	—
Operating income					86,638
Restructuring charges (Note 4)					9,353
Currency exchange losses, net (Note 6)					18,251
Product liability expense (Note 18)					6,425
Strategic transaction costs (Note 19)					1,985
Adjusted operating income (loss)	112,492	26,112	(15,952)	—	122,652
Adjusted operating margin %	25.3%	11.3%			
Depreciation and amortization					18,792
Adjusted EBITDA	124,742	32,459	(15,757)	—	141,444
Adjusted EBITDA %	28.0%	14.1%			

(In thousands, except percentage amounts)	Americas	International	Corporate	Reconciling Items[1]	Consolidated Totals
Three Months Ended June 30, 2018					
Sales to external customers	$ 215,339	$ 123,992	$ —	$ —	$ 339,331
Intercompany sales	36,445	84,514		(120,959)	—
Operating income					46,797
Restructuring charges (Note 4)					2,335
Currency exchange losses, net (Note 6)					815
Product liability expense (Note 18)					8,018
Strategic transaction costs (Note 19)					58
Adjusted operating income (loss)	49,838	15,853	(7,668)	—	58,023
Adjusted operating margin %	23.1%	12.8%			
Depreciation and amortization					9,536
Adjusted EBITDA	55,894	19,233	(7,568)		67,559
Adjusted EBITDA %	26.0%	15.5%			
Six Months Ended June 30, 2018					
Sales to external customers	$ 424,468	$ 240,757	$ —	$ —	$ 665,225
Intercompany sales	70,643	166,893	—	(237,536)	—
Operating income					91,232
Restructuring charges (Note 4)					7,609
Currency exchange losses, net (Note 6)					2,823
Product liability expense (Note 18)					10,842
Strategic transaction costs					152
Adjusted operating income (loss)	99,924	28,631	(15,897)	—	112,658
Adjusted operating margin %	23.5%	11.9%			
Depreciation and amortization					19,207
Adjusted EBITDA	112,119	35,441	(15,695)		131,865
Adjusted EBITDA %	26.4%	14.7%			

[1]Reconciling items consist primarily of intercompany eliminations and items not directly attributable to reporting segments.

Total sales by product group was as follows:

Three Months Ended June 30, 2019	**Consolidated**		**Americas**		**International**	
(In thousands, except percentages)	**Dollars**	**Percent**	**Dollars**	**Percent**	**Dollars**	**Percent**
Breathing Apparatus	$ 74,907	22%	$ 50,584	22%	$ 24,323	21%
Fixed Gas & Flame Detection	70,310	20%	39,118	17%	31,192	26%
Firefighter Helmets & Protective Apparel	48,799	14%	39,091	17%	9,708	8%
Portable Gas Detection	42,343	12%	33,844	13%	8,499	7%
Industrial Head Protection	38,921	11%	25,045	12%	13,876	12%
Fall Protection	31,629	9%	18,720	8%	12,909	11%
Other	42,766	12%	24,987	11%	17,779	15%
Total	$ 349,675	100%	$ 231,389	100%	$ 118,286	100%

Six Months Ended June 30, 2019	**Consolidated**		**Americas**		**International**	
(In thousands, except percentages)	**Dollars**	**Percent**	**Dollars**	**Percent**	**Dollars**	**Percent**
Breathing Apparatus	$ 150,354	22%	$ 101,489	23%	$ 48,865	21%
Fixed Gas & Flame Detection	130,709	19%	72,048	16%	58,661	25%
Firefighter Helmets & Protective Apparel	92,376	14%	74,155	17%	18,221	8%
Portable Gas Detection	83,069	12%	55,458	12%	27,611	12%
Industrial Head Protection	74,665	12%	58,258	13%	16,407	7%
Fall Protection	61,756	9%	36,680	8%	25,076	11%
Other	82,784	12%	46,988	11%	35,796	16%
Total	$ 675,713	100%	$ 445,076	100%	$ 230,637	100%

Three Months Ended June 30, 2018	**Consolidated**		**Americas**		**International**	
(In thousands, except percentages)	**Dollars**	**Percent**	**Dollars**	**Percent**	**Dollars**	**Percent**
Breathing Apparatus	$ 75,283	22%	$ 46,678	22%	$ 28,605	23%
Fixed Gas & Flame Detection	63,599	19%	33,128	15%	30,471	25%
Firefighter Helmets & Protective Apparel	46,676	14%	37,779	18%	8,897	7%
Portable Gas Detection	41,307	12%	27,137	13%	14,170	11%
Industrial Head Protection	39,639	12%	31,151	14%	8,488	7%
Fall Protection	26,052	8%	15,094	7%	10,958	9%
Other	46,775	13%	24,372	11%	22,403	18%
Total	$ 339,331	100%	$ 215,339	100%	$ 123,992	100%

Six Months Ended June 30, 2018	**Consolidated**		**Americas**		**International**	
(In thousands, except percentages)	**Dollars**	**Percent**	**Dollars**	**Percent**	**Dollars**	**Percent**
Breathing Apparatus	$ 149,901	23%	$ 96,012	23%	$ 53,889	22%
Fixed Gas & Flame Detection	124,530	19%	65,654	15%	58,876	24%
Firefighter Helmets & Protective Apparel	91,159	14%	72,533	17%	18,626	8%
Portable Gas Detection	83,534	13%	55,899	13%	27,635	11%
Industrial Head Protection	74,594	11%	58,992	14%	15,602	6%
Fall Protection	51,757	8%	29,203	7%	22,554	9%
Other	89,750	12%	46,175	11%	43,575	20%
Total	$ 665,225	100%	$ 424,468	100%	$ 240,757	100%

Note 9—Earnings per Share

Basic earnings per share attributable to MSA Safety Incorporated common shareholders is computed by dividing net income, after the deduction of preferred stock dividends and undistributed earnings allocated to participating securities, by the weighted average number of common shares outstanding during the period. Diluted earnings per share attributable to MSA Safety Incorporated common shareholders assumes the issuance of common stock for all potentially dilutive share equivalents outstanding not classified as participating securities. Participating securities are defined as unvested stock-based payment awards that contain nonforfeitable rights to dividends.

Amounts attributable to MSA Safety Incorporated common shareholders:	**Three Months Ended June 30,**		**Six Months Ended June 30,**	
(In thousands, except per share amounts)	**2019**	**2018**	**2019**	**2018**
Net income	$ 39,806	$ 33,179	$ 63,038	$ 65,550
Preferred stock dividends	(10)	(10)	(20)	(20)
Net income available to common equity	39,796	33,169	63,018	65,530
Dividends and undistributed earnings allocated to participating securities	(49)	(31)	(71)	(63)
Net income available to common shareholders	39,747	33,138	62,947	65,467
Basic weighted-average shares outstanding	38,663	38,327	38,602	38,272
Stock options and other stock compensation	497	576	522	569
Diluted weighted-average shares outstanding	39,160	38,903	39,124	38,841
Antidilutive stock options	—	—	—	—
Earnings per share:				
Basic	$ 1.03	$ 0.86	$ 1.63	$ 1.71
Diluted	$ 1.01	$ 0.85	$ 1.61	$ 1.69

Note 10—Income Taxes

The Company's effective tax rate for the second quarter of 2019 was 24.8% and differs from the U.S. federal statutory rate of 21% primarily due to increased profitability in less favorable tax jurisdictions and higher foreign entity losses in jurisdictions where we cannot take tax benefits. The Company's effective tax rate for the second quarter of 2018 was 22.8%, which differs from the U.S. federal statutory rate of 21% primarily due to increased profitability in less favorable tax jurisdictions and higher foreign entity losses in jurisdictions where we cannot take tax benefits, partially offset by a tax benefit of approximately 2.2% related to certain share-based payments related to the application of ASU 2016-09.

The Company's effective tax rate for the six months ended June 30, 2019, was 25.9% and differs from the U.S. federal statutory rate of 21% primarily due to increased profitability in less favorable tax jurisdictions and higher foreign entity losses in jurisdictions where we cannot take tax benefits and non-deductible foreign exchange on entity closures partially offset by certain share-based payments related to the application of ASU 2016-09. The Company's effective tax rate for the six months ended June 30, 2018, was 22.7% which differs from the U.S. federal statutory rate of 21% primarily due to higher profitability in less favorable tax jurisdictions and a charge for Global Intangible Low-Taxed Income (GILTI), partially offset a tax benefit of related to certain share-based payments related to the application of ASU 2016-09.

At June 30, 2019, the Company had a gross liability for unrecognized tax benefits of $13.4 million. The Company has recognized tax benefits associated with these liabilities of $5.2 million at June 30, 2019. The gross liability includes amounts associated with prior period foreign tax exposure.

The Company recognizes interest related to unrecognized tax benefits in interest expense and penalties in operating expenses. The Company's liability for accrued interest related to uncertain tax positions was $1.8 million at June 30, 2019.

Note 11—Stock Plans

The 2016 Management Equity Incentive Plan provides for various forms of stock-based compensation for eligible key employees through May 2026. Management stock-based compensation includes stock options, restricted stock, restricted stock units and performance stock units. Additionally, 2019 amounts granted include outstanding Sierra Monitor Corporation awards converted into MSA awards after the merger and acquisition. See Note 19 - Acquisitions for more information. The 2017 Non-Employee Directors' Equity Incentive Plan provides for grants of stock options and restricted stock to non-employee directors through May 2027. We issue treasury shares for stock option exercises, and grants of restricted stock and performance stock. Please refer to Note 7—Capital Stock for further information regarding stock compensation share issuance.

Stock compensation expense is as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
(In thousands)	**2019**	**2018**	**2019**	**2018**
Stock compensation expense	$ 3,340	$ 2,085	$ 6,086	$ 7,692
Income tax benefit	815	507	1,485	1,869
Stock compensation expense, net of income tax benefit	$ 2,525	$ 1,578	$ 4,601	$ 5,823

Stock options are granted at market value option prices and expire after ten years. Stock options are exercisable beginning three years after the grant date. Stock option expense is based on the fair value of stock option grants estimated on the grant dates using the Black-Scholes option pricing model and the following weighted average assumptions for options granted in 2019.

	2019
Fair value per option	$ 59.07
Risk-free interest rate	2.3%
Expected dividend yield	1.7%
Expected volatility	31%
Expected life (years)	6.4

The risk-free interest rate is based on the the U.S. Treasury yield curve. Expected dividend yield is based on the most recent annualized dividend divided by the 1 year average closing share price. Expected volatility is based on the historical volatility using daily stock prices. Expected life is based on historical stock option exercise data.

A summary of stock option activity for the six months ended June 30, 2019, follows:

	Shares	Weighted Average Exercise Price
Outstanding at January 1, 2019	735,001	$ 43.79
Granted (Note 19)	23,285	43.54
Exercised	(87,619)	38.09
Outstanding at June 30, 2019	670,667	44.53
Exercisable at June 30, 2019	657,453	$ 44.56

Restricted stock and restricted stock units are valued at the market value of the stock on the grant date. A summary of restricted stock and unit activity for the six months ended June 30, 2019, follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested at January 1, 2019	205,449	$ 68.97
Granted	60,760	102.96
Vested	(67,311)	49.31
Forfeited	(3,701)	83.88
Unvested at June 30, 2019	195,197	$ 87.93

Performance stock units have a market condition modifier and are valued at an estimated fair value using the Monte Carlo model. The final number of shares to be issued for performance stock units granted in the first quarter of 2019 may range from 0% to 200% of the target award based on achieving the specified performance targets over the performance period plus an additional payout modifier based on total shareholder return (TSR) performance. The following weighted average assumptions were used in the Monte Carlo model for units granted in the first quarter of 2019 with a market condition modifier.

Fair value per unit	$99.82
Risk-free interest rate	2.47%
Expected dividend yield	1.57%
Expected volatility	26.6%
MSA stock beta	1.094

The risk-free interest rate is based on the U.S. Treasury Constant Maturity rates as of the grant date converted into an implied spot rate yield curve. Expected dividend yield is based on the most recent annualized dividend divided by the one year average closing share price. Expected volatility is based on the ten year historical volatility using daily stock prices. Expected life is based on historical stock option exercise data.

A summary of performance stock unit activity for the six months ended June 30, 2019, follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested at January 1, 2019	218,886	$ 68.43
Granted	79,319	100.77
Performance adjustments	76,960	44.24
Vested	(139,478)	44.75
Unvested at June 30, 2019	235,687	$ 85.14

The performance adjustments above relate primarily to the final number of shares issued for the 2016 Management Performance Units which vested in the first quarter of 2019 at 237.6% of the target award based on cumulative performance against the Operating Margin % and Revenue Growth targets with a payout modifier based upon MSA's Total Shareholder Return during the three year performance period.

Note 12—Long-Term Debt

(In thousands)	June 30, 2019	December 31, 2018
2010 Senior Notes payable through 2021, 4.00%, net of debt issuance costs	$ 60,000	$ 60,000
2016 Senior Notes payable through 2031, 3.40%, net of debt issuance costs	69,619	69,604
Senior revolving credit facility maturing in 2023, net of debt issuance costs	268,761	231,707
Total	398,380	361,311
Amounts due within one year, net of debt issuance costs	20,000	20,000
Long-term debt, net of debt issuance costs	$ 378,380	$ 341,311

On September 7, 2018, the Company entered into an Amended and Restated Credit Agreement associated with our senior revolving credit facility which extended the term of the revolving credit facility through September 2023 and increased the capacity to $600.0 million. Under this 2018 Amended and Restated Credit Agreement, the Company may elect either a Base rate of interest (“BASE”) or an interest rate based on the London Interbank Offered Rate (“LIBOR”). The BASE is a daily fluctuating per annum rate equal to the highest of (i) 0.00%, (ii) the Prime Rate, (ii) the Federal Funds Open Rate plus one half of one percent (0.5%), (iii) the Overnight Bank Funding Rate, plus one half of one percent (0.50%), or (iv) the Daily Libor Rate plus one percent (1.00%). The Company pays a credit spread of 0 to 175 basis points based on the Company’s net EBITDA leverage ratio and elected rate (BASE or LIBOR). The Company has a weighted average revolver interest rate of 3.40% as of June 30, 2019. At June 30, 2019, $327.0 million of the existing $600.0 million senior revolving credit facility was unused, including letters of credit.

On January 22, 2016, the Company entered into a multi-currency note purchase and private shelf agreement (the "Notes"), pursuant to which MSA issued notes in an aggregate original principal amount of £54.9 million (approximately $69.8 million at June 30, 2019). The Notes are repayable in annual installments of £6.1 million (approximately $7.8 million at June 30, 2019), commencing January 22, 2023, with a final payment of any remaining amount outstanding on January 22, 2031. The interest rate on these Notes is fixed at 3.4%. On September 7, 2018, the Company entered into an amended and restated agreement associated with these Notes. Under this 2018 Second Amended and Restated Multi-Currency Note Purchase and Private Shelf Agreement, as amended ("Amended Note Purchase Agreement"), the Company may request from time to time during a three-year period ending September 7, 2021, the issuance of up to $150 million of additional senior notes. There were no amounts borrowed under the Amended Note Purchase Agreement as of June 30, 2019.

On January 4, 2019, the Company entered into an amended and restated agreement associated with the New York Life master note facility dated June 2, 2014. Under this Amended and Restated Master Note Facility ("Amended Note Facility"), the Company may request from time to time during a three-year period ending January 4, 2022, the issuance of up to $150 million of additional senior promissory notes. There were no amounts borrowed under the Amended Note Facility as of June 30, 2019.

Both the Amended Note Purchase Agreement and Amended Note Facility require MSA to comply with specified financial covenants, including a requirement to maintain a minimum fixed charges coverage ratio of not less than 1.50 to 1.00 and a consolidated leverage ratio not to exceed 3.50 to 1.00; except during an acquisition period in which case the consolidated net leverage ratio shall not exceed 4.00 to 1.00; in each case calculated on the basis of the trailing four fiscal quarters. In addition, the Amended Note Purchase Agreement and Amended Note Facility both contain negative covenants limiting the ability of MSA and its subsidiaries to incur additional indebtedness or issue guarantees, create or incur liens, make loans and investments, make acquisitions, transfer or sell assets, enter into transactions with affiliated parties, make changes in its organizational documents that are materially adverse to lenders or modify the nature of MSA's or its subsidiaries' business. However, the covenants contained in the Amended Note Facility do not apply until promissory notes are issued.

The revolving credit facilities require the Company to comply with specified financial covenants. In addition, the credit facilities contain negative covenants limiting the ability of the Company and its subsidiaries to enter into specified transactions. The Company was in compliance with all covenants at June 30, 2019.

The Company had outstanding bank guarantees and standby letters of credit with banks as of June 30, 2019, totaling $9.8 million, of which $3.0 million relate to the senior revolving credit facility. The letters of credit serve to cover customer requirements in connection with certain sales orders and insurance companies. The full amount of the letters of credit remains unused and available at of June 30, 2019. The Company is also required to provide cash collateral in connection with certain arrangements. At June 30, 2019, the Company has $0.5 million of restricted cash in support of these arrangements.

Note 13—Goodwill and Intangible Assets

Changes in goodwill during the six months ended June 30, 2019 are as follows:

(In thousands)		Goodwill
Balance at January 1, 2019	$	413,640
Additions (Note 19)		19,766
Currency translation		(250)
Balance at June 30, 2019	$	433,156

At June 30, 2019, the Company had goodwill of $293.0 million and $140.2 million related to the Americas and International reportable segments, respectively.

Changes in intangible assets, net of accumulated amortization during the six months ended June 30, 2019, are as follows:

(In thousands)		Intangible Assets
Net balance at January 1, 2019	$	169,515
Additions (Note 19)		11,000
Amortization expense		(5,281)
Currency translation		29
Net balance at June 30, 2019	$	175,263

At June 30, 2019, the above intangible assets balance includes a trade name with an indefinite life totaling $60.0 million.

Note 14—Leases

Effective January 1, 2019, we implemented ASU 2016-02, *Leases*, which amended authoritative guidance on leases and is codified in ASC Topic 842. The amended guidance requires lessees to recognize most leases on their balance sheets as right-of-use assets along with corresponding lease liabilities. The new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification determines whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease. The FASB's authoritative guidance provides companies with the option to apply this ASU to new and existing leases within the scope of the guidance as of the beginning of the period of adoption. We elected this transition method of applying the new standard and have recognized right-of-use assets and lease liabilities as of January 1, 2019. Prior period amounts were not adjusted and will continue to be reported under the accounting standards in effect for those periods. The adoption of this standard had a material impact on our unaudited Condensed Consolidated Balance Sheet as of June 30, 2019 due to the capitalization of right-of-use assets and lease liabilities associated with our current operating leases in which we are the lessee. Adoption of the new standard resulted in the recording of additional right-of-use assets and lease liabilities of approximately $54 million and $54 million, respectively, as of January 1, 2019.

Upon adoption of the new standard on January 1, 2019, we elected the package of practical expedients provided under the guidance. The practical expedient package applies to leases that commenced prior to adoption of the new standard and permits companies not to reassess whether existing or expired contracts are or contain a lease, the lease classification and any initial direct costs for existing leases. We have elected to not separate the lease and non-lease components within our lease contracts. Therefore, all fixed costs associated with the lease are included in the right-of-use asset and the lease liability. These costs often relate to the payments for a proportionate share of real estate taxes, insurance, common area maintenance and other operating costs in addition to base rent. We did not elect the hindsight practical expedient.

At the inception of our contracts we determine if the contract is or contains a lease. A contract is or contains a lease if it conveys the right to control the use of an identified asset for a period of time in exchange for consideration. Right-of-use assets and operating lease liabilities are recognized based on the present value of lease payments over the lease term at commencement. We use our incremental borrowing rate ("IBR") at the recognition date in determining the present value of future payments for leases that do not have a readily determinable implicit rate. Our IBR reflects a fully secured rate based on our credit rating, taking into consideration the repayment timing of the lease and any impacts due to the economic environment in which the lease operates.

Lease right-of-use assets and liabilities are recognized based on the present value of the fixed future lease payments over the lease term. Lease expense for all operating leases is classified in cost of products sold or selling, general and administrative expense in the unaudited Condensed Consolidated Statement of Income. For finance leases, the amortization of the right-of-use asset is included in depreciation and amortization, and the interest is included in interest expense.

As a lessee, we have various operating lease agreements primarily related to real estate, vehicles and office and plant equipment. Our lease payments are largely fixed. Variable lease payments that depend on an index or a rate are included in the lease payments and are measured using the prevailing index or rate at the measurement date, with differences between the calculated lease payment and the actual lease payment being expensed in the period of the change. Other variable lease payments, including utilities, consumption and common area maintenance as well as repairs, maintenance and mileage overages on vehicles, are expensed during the period incurred. Variable lease costs were immaterial for the six months ended June 30, 2019. A majority of our real estate leases include options to extend the lease and options to early terminate the lease. Leases with an early termination option generally involve a termination payment. If we are reasonably certain to exercise an option to extend a lease, the extension period is included as part of the right-of-use asset and the lease liability. Some of our leases contain residual value guarantees. These are guarantees made to the lessor that the value of an underlying asset returned to the lessor at the end of a lease will be at least a specified amount. Our leases do not contain restrictions or covenants that restrict us from incurring other financial obligations. We do not have any significant leases not yet commenced.

For our leases, we have elected to not apply the recognition requirements to leases of less than twelve months. These leases are expensed on a straight-line basis and are not included within the Company's operating lease asset or liability. Lease costs associated with leases of less than twelve months were immaterial for the six months ended June 30, 2019. We did not have any lease transactions with related parties.

	Other Information	
	Three Months Ended June 30,	**Six Months Ended June 30,**
(In thousands, except percentage amounts)	**2019**	**2019**
Lease cost:		
Operating lease cost recognized as rent expense	$ 3,299	$ 6,562
Total lease cost	3,299	6,562
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows related to operating leases	$ 3,267	$ 6,692
Non-cash other information:		
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 746	$ 2,629

	June 30, 2019
Weighted-average remaining lease term (in years):	
Operating leases	11
Weighted-average discount rate:	
Operating leases	4.32%

At June 30, 2019, future lease payments under operating leases were as follows:

(In thousands)		Operating Leases
Remainder of 2019	$	6,207
2020		9,188
2021		7,636
2022		4,825
2023		4,028
After 2023		32,700
Total future minimum operating lease payments	$	64,584
Less: Imputed interest		13,748
Present value of operating lease liabilities		50,836
Less: Current portion operating lease liabilities[a]		10,126
Noncurrent operating lease liabilities	$	40,710

[a] Included in "Warranty reserve and other current liabilities" on the unaudited Condensed Consolidated Balance Sheet.

Note 15—Pensions and Other Post-retirement Benefits

Components of net periodic benefit cost consisted of the following:

	Pension Benefits		Other Benefits	
(In thousands)	2019	2018	2019	2018
Three Months Ended June 30,				
Service cost	$ 2,736	$ 2,891	$ 89	$ 83
Interest cost	4,721	4,219	249	175
Expected return on plan assets	(9,658)	(9,096)	—	—
Amortization of prior service cost (credit)	112	(6)	(101)	(125)
Recognized net actuarial losses	2,534	3,453	217	351
Settlements	2,363 [b]	27	—	141
Net periodic benefit cost [a]	$ 2,808	$ 1,488	$ 454	$ 625
Six Months Ended June 30,				
Service cost	$ 5,159	$ 5,782	$ 178	$ 184
Interest cost	9,426	8,438	498	396
Expected return on plan assets	(19,311)	(18,193)	—	—
Amortization of prior service cost (credit)	108	(11)	(202)	(202)
Recognized net actuarial losses	5,111	6,907	434	376
Settlements	2,363 [b]	53	—	—
Net periodic benefit cost[a]	$ 2,856	$ 2,976	$ 908	$ 754

[a] Components of net periodic benefit cost other than service cost are included in the line item "Other income, net" in the unaudited Condensed Consolidated Statement of Income.
[b] Related to a non-cash charge associated with the closure of our pension plan in the U.K. and included in "Restructuring charges" on the unaudited Condensed Consolidated Statement of Income.

We made contributions of $3.5 million and $2.5 million to our pension plans during the six months ended June 30, 2019 and 2018, respectively. We expect to make total contributions of approximately $7.1 million to our pension plans in 2019 which are primarily associated with our International segment.

Note 16—Derivative Financial Instruments

As part of our currency exchange rate risk management strategy, we may enter into certain derivative foreign currency forward contracts that do not meet the U.S. GAAP criteria for hedge accounting, but which have the impact of partially offsetting certain foreign currency exposures. We account for these forward contracts at fair value and report the related gains or losses in currency exchange losses, net, in the unaudited Condensed Consolidated Statement of Income. The notional amount of open forward contracts was $74.8 million and $72.4 million at June 30, 2019, and December 31, 2018, respectively.

The following table presents the unaudited Condensed Consolidated Balance Sheet location and fair value of assets and liabilities associated with derivative financial instruments:

(In thousands)	June 30, 2019	December 31, 2018
Derivatives not designated as hedging instruments:		
Foreign exchange contracts: other current liabilities	$ 212	$ 12
Foreign exchange contracts: other current assets	—	488

The following table presents the unaudited Condensed Consolidated Statement of Income location and impact of derivative financial instruments:

		Loss Recognized in Income	
		Six Months Ended June 30,	
(In thousands)	Statement of Income Location	2019	2018
Derivatives not designated as hedging instruments:			
Foreign exchange contracts	Currency exchange losses, net	$ 2,407	$ 587

Note 17—Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are:

- Level 1—Observable inputs that reflect unadjusted quoted prices for identical assets or liabilities in active markets.
- Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3—Unobservable inputs for the asset or liability.

The valuation methodologies we used to measure financial assets and liabilities include the derivative financial instruments described in Note 16—Derivative Financial Instruments. We estimate the fair value of the derivative financial instruments, consisting of foreign currency forward contracts, based upon valuation models with inputs that generally can be verified by observable market conditions and do not involve significant management judgment. Accordingly, the fair values of the derivative financial instruments are classified within Level 2 of the fair value hierarchy.

We value our investments in marketable securities, primarily fixed income, at fair value using quoted market prices for similar securities or pricing models. Accordingly, the fair values of the investments are classified within Level 2 of the fair value hierarchy. The amortized cost basis of our investments was $72.1 million and $55.4 million as of June 30, 2019 and December 31, 2018, respectively. The fair value was $72.5 million and $55.1 million as of June 30, 2019 and December 31, 2018, respectively, which was reported in "Investments, short-term" in the accompanying unaudited Condensed Consolidated Balance Sheet. The change in fair value is recorded in other comprehensive income, net of tax. The Company does not intend to sell, nor is it more likely than not that we will be required to sell, these securities prior to recovery of their cost, as such, management believes that any unrealized gains or losses are temporary; therefore, no impairment gains or losses relating to these securities have been recognized. All investments in marketable securities have maturities of one year or less and are currently in an unrealized loss position as of June 30, 2019.

With the exception of fixed rate long-term debt, we believe that the reported carrying amounts of our financial assets and liabilities approximate their fair values. The reported carrying amount of our fixed rate long-term debt (including the current portion) was $129.6 million and $130.0 million at June 30, 2019, and December 31, 2018, respectively. The fair value of this debt was $143.9 million and $139.0 million at June 30, 2019, and December 31, 2018, respectively. The fair value of this debt was determined using Level 2 inputs by evaluating similarly rated companies with publicly traded bonds where available or current borrowing rates available for financings with similar terms and maturities.

Note 18—Contingencies

Product liability

We face an inherent business risk of exposure to product liability claims arising from the alleged failure of our products to prevent the types of personal injury or death against which they are designed to protect. Product liability claims are categorized as either single incident or cumulative trauma.

Single incident product liability claims. Single incident product liability claims involve incidents of short duration that are typically known when they occur and involve observable injuries, which provide an objective basis for quantifying damages. The Company estimates its liability for single incident product liability claims based on expected settlement costs for asserted single incident product liability claims, and an estimate of costs for single incident product liability claims incurred but not reported ("IBNR"). The estimate for IBNR claims is based on experience, sales volumes, and other relevant information. The reserve for single incident product liability claims, which includes asserted single incident product liability claims and IBNR single incident product liability claims, was $4.0 million and $3.6 million at June 30, 2019 and December 31, 2018, respectively. Single incident product liability expense was $0.4 million during the six months ended June 30, 2019 and $0.9 million during the six months ended June 30, 2018. Single incident product liability exposures are evaluated on an annual basis, or more frequently if changing circumstances warrant. Adjustments are made to the reserve as appropriate.

Cumulative trauma product liability claims. Cumulative trauma product liability claims involve exposures to harmful substances (e.g., silica, asbestos and coal dust) that occurred years ago and may have developed over long periods of time into diseases such as silicosis, asbestosis, mesothelioma, or coal worker’s pneumoconiosis. One of the Company's affiliates Mine Safety Appliances Company, LLC ("MSA LLC") was named as a defendant in 1,552 lawsuits comprised of 2,450 claims as of June 30, 2019. These lawsuits mainly involve respiratory protection products allegedly manufactured and sold by MSA LLC or its predecessors. The products at issue were manufactured many years ago and are not currently offered by MSA LLC.

A summary of cumulative trauma product liability lawsuits and asserted cumulative trauma product liability claims activity is as follows:

	Six Months Ended June 30, 2019	Year Ended December 31, 2018
Open lawsuits, beginning of period	1,481	1,420
New lawsuits	133	369
Settled and dismissed lawsuits	(62)	(308)
Open lawsuits, end of period	1,552	1,481

	Six Months Ended June 30, 2019	Year Ended December 31, 2018
Asserted claims, beginning of period	2,355	2,242
New claims	233	479
Settled and dismissed claims	(138)	(366)
Asserted claims, end of period	2,450	2,355

More than half of the open lawsuits at June 30, 2019, have had a de minimis level of activity over the last 5 years. It is possible that these cases could become active again at any time due to changes in circumstances.

Cumulative trauma product liability litigation is inherently unpredictable and MSA LLC's expense with respect to cumulative trauma product liability claims could vary significantly in future periods. Factors that limit MSA LLC's ability to estimate potential liability for cumulative trauma product liability claims include low volumes in the number of claims asserted and resolved (both in general and with respect to particular plaintiffs’ counsel as claims experience can vary significantly among different counsel), inconsistency of claims composition, uncertainty as to if and over what time periods claims might be asserted in the future, and other factors. With respect to the risk associated with any particular case that is filed against MSA

LLC, it has typically not been until very late in the legal process that it can be reasonably determined whether it is probable that such a case will ultimately result in a liability. This uncertainty is caused by many factors, including consideration of the applicable statute of limitations, the sufficiency of product identification and other defenses. The complaints initially filed generally have not provided information sufficient to determine if a lawsuit will develop into an actively litigated case. Even when a case is actively litigated, it is often difficult to determine if the lawsuit will be dismissed or otherwise resolved until late in the lawsuit. Moreover, even if it is probable that such a lawsuit will result in a loss, it is often difficult to estimate the amount of actual loss that will be incurred. These actual loss amounts are highly variable and turn on a case-by-case analysis of the relevant facts, including the nature of the injury, the jurisdiction in which the claim is filed, the counsel for the plaintiff and the number of parties in the lawsuit. In addition, there are uncertainties concerning the impact of bankruptcies of other companies that are co-defendants with respect to particular claims and uncertainties surrounding the litigation process in different jurisdictions and from case to case within a particular jurisdiction.

Management works with outside legal counsel quarterly to review and assess MSA LLC's exposure to asserted cumulative trauma product liability claims not yet resolved. In addition, in connection with finalizing and reporting its results of operations, management works annually (unless significant changes in trends or new developments warrant an earlier review) with an outside valuation consultant and outside legal counsel to review MSA LLC's exposure to all cumulative trauma product liability claims. The review process for asserted cumulative trauma product liability claims not yet resolved takes into account available facts for those claims, including their number and composition, outcomes of matters resolved during current and prior periods, and variances associated with different groups of claims, plaintiffs' counsel, claims filing trends, and venues, as well as any other relevant information.

In August 2017, MSA LLC obtained additional detailed information about a significant number of claims that were then pending against it, including the nature and extent of the alleged injuries, product identification and other factors. MSA LLC subsequently agreed to resolve a substantial number of these claims for $75.2 million, a portion of which was insured. Amounts in excess of estimated insurance recoveries were reflected within Product liability expense in the unaudited Condensed Consolidated Statement of Income. MSA LLC paid a total of $28.6 million during 2018 and $21.4 million during the six months ended June 30, 2019, related to these settlements. The payments made during 2019 represent the final payments for these claims.

There remains considerable uncertainty in numerous aspects of MSA LLC's potential future claims experience, such as with respect to the number of claims that might be asserted, the alleged severity of those claims and the average settlement values of those claims, and that uncertainty may cause actual claims experience in the future to vary from the current estimate. Numerous uncertainties also exist with respect to factors not specific to MSA LLC’s claims experience, including potential legislative or judicial changes at the federal level or in key states concerning claims adjudication, future bankruptcy proceedings involving key co-defendants, payments from trusts established to compensate claimants, and/or changes in medical science relating to the diagnosis and treatment of cumulative trauma product liability claims. If future estimates of asserted cumulative trauma product liability claims not yet resolved and/or incurred but not reported ("IBNR") cumulative trauma product liability claims are materially higher (lower) than the accrued liability, we will record an appropriate charge (credit) to the unaudited Condensed Consolidated Statement of Income to increase (decrease) the accrued liability.

Certain significant assumptions underlying the material components of the accrual for IBNR cumulative trauma product liability claims include MSA LLC's experience related to the following:

- The types of illnesses alleged by claimants to give rise to their claims;
- The number of claims asserted against MSA LLC;
- The propensity of claimants and their counsel asserting cumulative trauma product liability claims to name MSA LLC as a defendant;
- The percentage of cumulative trauma product liability claims asserted against MSA LLC that are dismissed without payment;
- The average value of settlements paid to claimants; and
- The jurisdiction in which claims are asserted.

Additional assumptions include the following:

- MSA LLC will continue to evaluate and handle cumulative trauma product liability claims in accordance with its existing defense strategy;
- The number and effect of co-defendant bankruptcies will not materially change in the future;
- No material changes in medical science occur with respect to cumulative trauma product liability claims; and
- No material changes in law occur with respect to cumulative trauma product liability claims including, in particular, no material state or federal tort reform actions affecting such claims.

Total cumulative trauma product liability reserve was $158.8 million at June 30, 2019, including $10.0 million for claims settled but not yet paid and related defense costs, and $187.3 million at December 31, 2018, including $24.5 million for claims settled but not yet paid and related defense costs. This reserve includes estimated amounts for asserted claims not yet resolved and IBNR claims. The amount included in the reserve for IBNR cumulative trauma product liability claims represents the estimated value of such claims if the most likely potential outcome with respect to each of the assumptions described above is applied. Those estimated amounts reflect asbestos, silica and coal dust claims expected to be asserted through the year 2069 and are not discounted to present value. The Company revised its estimates of MSA LLC's potential liability for cumulative trauma product liability claims for the year ended December 31, 2018 as a result of its annual review process. The revisions to the Company's estimates of potential liability for cumulative trauma product liability claims are based on an assessment of trends in the tort system generally and changes in MSA LLC's claims experience over the past year, including the number of claims asserted, average value of settlements paid to claimants, the number and percentage of claims resolved with payment, the jurisdiction in which claims are asserted, and the counsel asserting such claims. The reserve does not include amounts which will be spent to defend the claims covered by the reserve. Defense costs are recognized in the unaudited Condensed Consolidated Statement of Income as incurred. There was no interim remeasurement of the cumulative trauma product liability reserve as of June 30, 2019.

At June 30, 2019, $12.5 million of the total reserve for cumulative trauma product liability claims is recorded in the Insurance and product liability line within other current liabilities in the unaudited Condensed Consolidated Balance Sheet and the remainder, $146.3 million, is recorded in the Product liability and other noncurrent liabilities line. At December 31, 2018, $38.8 million of the total reserve for cumulative trauma product liability claims is recorded in the Insurance and product liability line within other current liabilities in the unaudited Condensed Consolidated Balance Sheet and the remainder, $148.5 million, is recorded in the Product liability and other noncurrent liabilities line.

Because litigation is subject to inherent uncertainties, and unfavorable rulings or developments could occur, there can be no certainty that MSA LLC may not ultimately incur charges in excess of presently recorded liabilities. The reserve for liabilities relating to cumulative trauma product liability claims may be adjusted from time to time based on whether the actual number, types, and settlement value of claims differs from current projections and estimates and other developing facts and circumstances. These adjustments may reflect changes in estimates for asserted cumulative trauma product liability claims not yet resolved and/or IBNR cumulative trauma product liability claims. These adjustments may be material and could materially impact our consolidated financial statements in future periods.

Insurance Receivable and Notes Receivable, Insurance Companies

In the normal course of business, MSA LLC makes payments to settle various claims and for related defense costs and records receivables for the estimated amounts that are covered by insurance. With respect to cumulative trauma product liability claims, MSA LLC purchased insurance policies for the policy years from 1952-1986 from over 20 different insurance carriers that, subject to some common contract exclusions, provided coverage for cumulative trauma product liability losses and, in many instances, related defense costs (the "Occurrence-Based Policies"). The Occurrence-Based Policies have significant per claim retentions and applicable exclusions for cumulative trauma product liability claims after April 1986. While we continue to pursue reimbursement under certain policies, the vast majority of these insurance policies have been exhausted, settled or converted into negotiated coverage-in-place agreements with the applicable insurers (the "Coverage-In-Place Agreements"). As a result, MSA LLC is now largely self-insured for cumulative trauma product liability claims.

Since MSA LLC is now largely self-insured for cumulative trauma product liability claims, additional amounts recorded as insurance receivables will be limited and based on calculating the amounts to be reimbursed pursuant to negotiated Coverage-In-Place Agreements. Various factors could affect the timing and amount of recovery of the insurance receivables, including assumptions regarding claims composition (which are relevant to calculating reimbursement under the terms of certain Coverage-In-Place Agreements) and the extent to which the issuing insurers may become insolvent in the future.

Insurance receivables at June 30, 2019, totaled $59.9 million, of which, $9.9 million is reported in Prepaid expenses and other current assets in the unaudited Condensed Consolidated Balance Sheet and $50.0 million is reported in Insurance receivable and other noncurrent assets. Insurance receivables at December 31, 2018, totaled $71.7 million, of which $14.8 million was reported in Prepaid expenses and other current assets in the unaudited Condensed Consolidated Balance Sheet and $56.9 million was reported in Insurance receivable and other noncurrent assets. The vast majority of the $59.9 million insurance receivable balance at June 30, 2019 is attributable to reimbursement believed to be due under the terms of signed Coverage-In-Place Agreements.

A summary of Insurance receivable balances and activity related to cumulative trauma product liability losses is as follows:

(In millions)	Six Months Ended June 30, 2019	Year Ended December 31, 2018
Balance beginning of period	$ 71.7	$ 134.7
Additions	0.8	19.6
Collections, settlements converted to notes receivable and other adjustments	(12.6)	(82.6)
Balance end of period	$ 59.9	$ 71.7

Additions to insurance receivables in the above table represent insured cumulative trauma product liability losses and related defense costs which we believe are covered by the Occurrence-Based Policies or applicable Coverage-in-Place Agreements. Collections of the receivables primarily occur pursuant to the terms of negotiated agreements with the insurance companies, either in a lump sum, in installments over time, or to reimburse a portion of future expense once incurred (i.e. pursuant to a Coverage-In-Place Agreement).

In some cases, payment streams due pursuant to negotiated settlement agreements were converted to formal notes receivable from insurance companies. The notes receivable were recorded as a transfer from the Insurance receivable balance to the Notes receivable, insurance companies (current and noncurrent) in the unaudited Condensed Consolidated Balance Sheet. In cases where the payment stream covers multiple years and there were no contingencies, the present value of the payments was recorded as a transfer from the insurance receivable balance to the Notes receivable, insurance companies (current and long-term) in the unaudited Condensed Consolidated Balance Sheet. Provided the remaining insurance receivable was recoverable through the insurance carriers, no gain or loss was recognized at the time of transfer from Insurance receivable to Notes receivable, insurance companies.

Notes receivable from insurance companies at June 30, 2019, totaled $60.3 million, of which $3.6 million is reported in Notes receivable, insurance companies, current on the unaudited Condensed Consolidated Balance Sheet and $56.7 million is reported in Notes receivable, insurance companies, noncurrent. Notes receivable from insurance companies at December 31, 2018, totaled $59.6 million, of which $3.6 million was reported in Notes receivable, insurance companies, current in the unaudited Condensed Consolidated Balance Sheet and $56.0 million was reported in Notes receivable, insurance companies, noncurrent.

A summary of Notes receivable, insurance companies balances is as follows:

(In millions)	Six Months Ended June 30, 2019	Year Ended December 31, 2018
Balance beginning of period	$ 59.6	$ 76.9
Additions	0.7	1.7
Collections	—	(19.0)
Balance end of period	$ 60.3	$ 59.6

The collectibility of MSA LLC's insurance receivables and notes receivable is regularly evaluated and we believe that the amounts recorded are probable of collection. The determination that the recorded insurance receivables are probable of collection is based on the terms of the settlement agreements reached with the insurers, assumptions regarding various aspects of the composition of future claims (which are relevant to calculating reimbursement under the terms of certain Coverage-In-Place Agreements), the financial ability of the insurance carriers to pay the claims, and the advice of MSA LLC's outside legal counsel.

Total cumulative trauma liability losses were $7.1 million and $11.8 million for the six months ended June 30, 2019 and June 30, 2018, respectively, primarily related to the defense of cumulative trauma product liability claims. Uninsured cumulative trauma product liability losses, which were included in Product liability expense in the unaudited Condensed Consolidated Statement of Income, were $6.4 million and $10.8 million for the six months ended June 30, 2019 and June 30, 2018, respectively.

Insurance Litigation

For more than a decade, MSA LLC was engaged in coverage litigation with many of its insurance carriers that issued Occurrence-Based Policies. In July 2010, MSA LLC (as Mine Safety Appliances Company) filed a lawsuit in the Superior Court of the State of Delaware seeking declaratory and other relief concerning the future rights and obligations of MSA LLC and its excess insurance carriers under various insurance policies. During the same time period, MSA LLC was also engaged in coverage disputes with The North River Insurance Company ("North River") in various courts. Since 2010, MSA LLC reached negotiated resolutions with the vast majority of the insurance carriers once in litigation, including the July 2018 settlement with North River disclosed below.

In July 2018, MSA LLC resolved through a negotiated settlement its remaining coverage litigation with North River. As part of this settlement in October 2018, MSA LLC dismissed all claims and appeals against North River in each of the pending coverage actions. This represents a settlement with MSA LLC's last major Occurrence-Based insurance carrier. Payment under this negotiated settlement was received in the third quarter of 2018 and was accounted for as a reduction of the insurance receivable balance.

Product Warranty

The Company provides warranties on certain product sales. Product warranty reserves are established in the same period that revenue from the sale of the related products is recognized, or in the period that a specific issue arises as to the functionality of a Company's product. The determination of such reserves requires the Company to make estimates of product return rates and expected costs to repair or to replace the products under warranty.

The amounts of the reserves are based on established terms and the Company's best estimate of the amounts necessary to settle future and existing claims on products sold as of the balance sheet date. If actual return rates and/or repair and replacement costs differ significantly from estimates, adjustments to recognize additional cost of sales may be required in future periods.

The following table reconciles the changes in the Company's accrued warranty reserve:

(In thousands)	Six Months Ended June 30, 2019	Year Ended December 31, 2018
Beginning warranty reserve	$ 14,214	$ 14,753
Warranty payments	(6,395)	(9,955)
Warranty claims	6,379	10,585
Provision for product warranties	(518)	(1,169)
Ending warranty reserve	$ 13,680	$ 14,214

Warranty expense was $5.9 million and $5.5 million for the six months ended June 30, 2019 and 2018, respectively.

Note 19—Acquisitions

Acquisition of Sierra Monitor Corporation

On May 20, 2019, we acquired 100% of the common stock in Sierra Monitor Corporation ("SMC") in an all-cash transaction valued at $33.2 million, net of cash acquired. Additionally, we converted outstanding stock options and restricted stock units into MSA stock options and restricted stock units which resulted in additional goodwill of approximately $0.9 million based on the fair value of the awards identified as transaction consideration.

Based in Milpitas, California, in the heart of Silicon Valley, SMC is a leading provider of fixed gas and flame detection instruments and Industrial Internet of Things solutions that connect and help protect high-value infrastructure assets. The acquisition enables MSA to accelerate its strategy to enhance worker safety and accountability through the use of cloud technology and wireless connectivity; a key focus of the Company's recently established Safety io™ subsidiary. MSA launched Safety io in 2018, primarily to leverage the capabilities of its portable gas detection portfolio as it relates to cloud connectivity. The transaction was funded through borrowings on our unsecured senior revolving credit facility.

SMC operating results are included in our unaudited condensed consolidated financial statements from the acquisition date as part of the Americas reportable segment. The acquisition qualifies as a business combination and will be accounted for using the acquisition method of accounting.

The following table summarizes the fair values of the SMC assets acquired and liabilities assumed at the date of acquisition:

(In millions)		May 20, 2019
Current assets (including cash of $2.1 million)	$	10.5
Property, plant and equipment and other noncurrent assets		1.3
Customer relationships		9.6
Acquired technology		1.4
Goodwill		19.8
Total assets acquired		42.6
Total liabilities assumed		6.4
Net assets acquired	$	36.2

The amounts in the table above are subject to change upon completion of the valuation of the assets acquired and liabilities assumed. This valuation is expected to be completed by mid-2020.

Assets acquired and liabilities assumed in connection with the acquisition have been recorded at their fair values. Fair values were determined by management, based, in part on an independent valuation performed by a third party valuation specialist. The valuation methods used to determine the fair value of intangible assets included the relief from royalty method for technology related intangible assets; the excess earnings approach for customer relationships using customer inputs and contributory charges; and the cost method for assembled workforce which is included in goodwill. A number of significant assumptions and estimates were involved in the application of these valuation methods, including sales volumes and prices, royalty rates, costs to produce, tax rates, capital spending, discount rates, and working capital changes. Cash flow forecasts were generally based on SMC pre-acquisition forecasts coupled with estimated MSA sales synergies. Identifiable intangible assets with finite lives are subject to amortization over their estimated useful lives. The customer relationships acquired in the SMC transaction will be amortized over a period of 10 years and the technology will be amortized over 5 years. Estimated future amortization expense related to the identifiable intangible assets is approximately $0.6 million for the remainder of 2019, $1.2 million in each of the next four years 2020 through 2023 and $5.3 million thereafter. The step up to fair value of acquired inventory as part of the purchase price allocation totaled $1.6 million which will be amortized over six months.

Goodwill is calculated as the excess of the purchase price over the fair value of net assets acquired and represents the future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. Among the factors that contributed to a purchase price in excess of the fair value of the net tangible and intangible assets acquired were the acquisition of an assembled workforce, the expected synergies and other benefits that we believe will result from combining the operations of SMC with our operations. Goodwill of $19.8 million related to the SMC acquisition has been recorded in the Americas reportable segment and is non-deductible for tax purposes.

Our results for the six months ended June 30, 2019, include strategic transaction costs of approximately $2 million, including costs related to the acquisition of SMC. Our results for the six months ended June 30, 2018, include an immaterial amount of strategic transaction costs. These costs are reported in selling, general and administrative expenses.

The operating results of the SMC acquisition have been included in our unaudited condensed consolidated financial statements from the acquisition date through June 30, 2019. Our results for the six months ended June 30, 2019, include SMC sales and net loss of $2.6 million and $1.5 million, respectively.

The following unaudited pro forma information presents our combined results as if the SMC acquisition had occurred at on January 1, 2019. The unaudited pro forma financial information was prepared to give effect to events that are (1) directly attributable to the acquisition; (2) factually supportable; and (3) expected to have a continuing impact on the combined company’s results. There were no material transactions between MSA and SMC during the periods presented that are required to be eliminated. Intercompany transactions between SMC companies during the periods presented have been eliminated in the unaudited pro forma condensed combined financial information. The unaudited pro forma condensed combined financial information does not reflect any cost savings, operating synergies or revenue enhancements that the combined companies may achieve as a result of the acquisition or the costs to integrate the operations or the costs necessary to achieve cost savings, operating synergies or revenue enhancements.

Pro forma condensed combined financial information (Unaudited)

	Three months ended June 30,		Six months ended June 30,	
(In millions, except per share amounts)	**2019**	**2018**	**2019**	**2018**
Net sales	$ 352.4	$ 344.9	$ 684.0	$ 675.9
Net income	38.7	33.2	62.0	65.6
Basic earnings per share	1.00	0.87	1.61	1.72
Diluted earnings per share	0.99	0.85	1.58	1.69

The unaudited pro forma condensed combined financial information is presented for information purposes only and is not intended to represent or be indicative of the combined results of operations or financial position that we would have reported had the acquisition been completed as of the date and for the period presented, and should not be taken as representative of our condensed consolidated results of operations or financial condition following the acquisition. In addition, the unaudited proforma condensed combined financial information is not intended to project the future financial position or results of operations of the combined company.

The unaudited pro forma condensed combined financial information was prepared using the acquisition method of accounting under existing U.S. GAAP. MSA has been treated as the acquirer.

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

The following discussion and analysis should be read in conjunction with the historical financial statements and other financial information included elsewhere in this quarterly report on Form 10-Q. This discussion may contain forward-looking statements that involve risks and uncertainties. The forward-looking statements are not historical facts, but rather are based on current expectations, estimates, assumptions and projections about our industry, business and future financial results. Our actual results could differ materially from the results contemplated by these forward-looking statements due to a number of factors, including those discussed in the sections of our annual report entitled “Forward-Looking Statements” and “Risk Factors.”

BUSINESS OVERVIEW

We are a global leader in the development, manufacture and supply of safety products that protect people and facility infrastructures. Many MSA products integrate a combination of electronics, mechanical systems and advanced materials to protect users against hazardous or life-threatening situations. The Company's comprehensive product line is used by workers around the world in a broad range of markets, including the oil, gas and petrochemical ("OGP"), fire service, construction, utilities and mining industries. MSA's core products include fixed gas and flame detection systems, breathing apparatus where self-contained breathing apparatus ("SCBA") is the principal product, portable gas detection instruments, industrial head protection products, firefighter helmets and protective apparel, and fall protection devices. We are committed to providing our customers with service unmatched in the safety industry and, in the process, enhancing our ability to provide a growing line of safety solutions for customers in key global markets.

On May 20, 2019, the Company acquired 100% of the common stock of Sierra Monitor Corporation ("SMC") in an all-cash transaction valued at $33.2 million, net of cash acquired. Based in Milpitas, California, in the heart of Silicon Valley, SMC is a leading provider of fixed gas and flame detection instruments and Industrial Internet of Things solutions that connect and help protect high-value infrastructure assets. The acquisition enables MSA to accelerate its strategy to enhance worker safety and accountability through the use of cloud technology and wireless connectivity; a key focus of the company's recently established Safety io™ subsidiary. MSA launched Safety io in 2018, primarily to leverage the capabilities of its portable gas detection portfolio as it relates to cloud connectivity. The transaction was funded through borrowings on our unsecured senior revolving credit facility. Refer to Note - 19 Acquisitions to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q for further information.

We tailor our product offerings and distribution strategy to satisfy distinct customer preferences that vary across geographic regions. To best serve these customer preferences, we have organized our business into seven geographical operating segments that are aggregated into three reportable geographic segments: Americas, International and Corporate. In 2018, 63% and 37% of our net sales were made by our Americas and International segments, respectively.

Americas. Our largest manufacturing and research and development facilities are located in the United States (U.S.). We serve our markets across the Americas with manufacturing facilities in the U.S., Mexico and Brazil. Operations in other Americas segment countries focus primarily on sales and distribution in their respective home country markets.

International. Our International segment includes companies in Europe, the Middle East, Africa and the Asia Pacific region, some of which are in developing regions of the world. In our largest International affiliates (in Germany, France, United Kingdom (U.K.), Ireland and China), we develop, manufacture and sell a wide variety of products. In China, the products manufactured are sold primarily in the home country as well as in regional markets. Operations in other International segment countries focus primarily on sales and distribution in their respective home country markets. Although some of these companies may perform limited production, most of their sales are of products manufactured in our plants in Germany, France, the U.S., U.K., Ireland and China, or are purchased from third-party vendors. During the six months ended June 30, 2019, a plan to close our South Africa affiliates was approved as part of our footprint rationalization but we will continue to serve the Africa region through our channel partners.

Corporate. The Corporate segment primarily consists of general and administrative expenses incurred in our corporate headquarters, costs associated with corporate development initiatives, legal expense, interest expense, foreign exchange gains or losses and other centrally-managed costs. Corporate general and administrative costs comprise the majority of the expense in the Corporate segment.

PRINCIPAL PRODUCTS

The following is a brief description of each of our principal product categories:

MSA's corporate strategy includes a focus on driving sales of core products where we have leading market positions and a distinct competitive advantage. Core products, as mentioned above, include fixed gas and flame detection instruments, breathing apparatus where SCBA is the principal product, portable gas detection instruments, industrial head protection products, firefighter helmets and protective apparel, and fall protection devices. These products receive the highest levels of investment and resources as they typically realize higher levels of return on investment than non-core products. Core products comprised approximately 88% and 87% of sales for the six months ended June 30, 2019 and 2018, respectively.

MSA maintains a portfolio of non-core products. Non-core products reinforce and extend the core offerings, drawing upon our customer relationships, distribution channels, geographical presence and technical experience. These products are complementary to the core offerings and have their roots within the core product value chain. Key non-core products include respirators, eye and face protection, ballistic helmets and gas masks. Ballistic helmet and gas mask sales are the primary sales to our military customers and were approximately $18.7 million and $20.8 million globally during the six months ended June 30, 2019 and 2018, respectively.

A detailed listing of our significant product offerings in the aforementioned product groups above is included in MSA's Annual Report on Form 10-K for the year ended December 31, 2018.

RESULTS OF OPERATIONS

Three Months Ended June 30, 2019, Compared to Three Months Ended June 30, 2018

Net Sales. Net sales for the three months ended June 30, 2019, were $349.7 million, an increase of $10.4 million, or 3.0% compared to $339.3 million for the three months ended June 30, 2018. Please refer to the Net Sales table for a reconciliation of the quarter over quarter sales change.

Net Sales	**Three Months Ended June 30,**			
(In millions)	**2019**	**2018**	**Dollar Increase**	**Percent Increase**
Consolidated	**$349.7**	**$339.3**	**$10.4**	**3.0%**
Americas	231.4	215.3	16.1	7.5%
International	118.3	124.0	(5.7)	(4.6)%

Net Sales	**Three Months Ended June 30, 2019 versus June 30, 2018**		
(Percent Change)	**Americas**	**International**	**Consolidated**
GAAP reported sales change	**7.5%**	**(4.6)%**	**3.0%**
Currency translation effects	0.6%	5.1%	2.4%
Constant currency sales change	8.1%	0.5%	5.4%

Note: Constant currency sales change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency sales change is calculated by deducting the percentage impact from currency translation effects from the overall percentage change in net sales.

Net sales for the Americas segment were $231.4 million in the second quarter of 2019, an increase of $16.1 million, or 7.5%, compared to $215.3 million in the second quarter of 2018, on stronger core sales. During the quarter, constant currency sales in the Americas segment increased 8.1% compared to the prior year period, driven primarily by growth across our portfolio with notable strength in fixed gas and flame detection and fall protection products.

Net sales for the International segment were $118.3 million in the second quarter of 2019, a decrease of $5.7 million, or 4.6%, compared to $124.0 million for the second quarter of 2018. Constant currency sales in the International segment increased 0.5% during the quarter as we recognized stronger core sales across the portfolio offset by weaker non-core sales primarily in Europe on lower ballistic helmet sales.

Refer to Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item I of this Form 10-Q, for information regarding sales by product group.

Gross profit. Gross profit for the second quarter of 2019 was $161.1 million, an increase of $7.3 million or 4.7%, compared to $153.8 million for the second quarter of 2018. The ratio of gross profit to net sales was 46.1% in the second quarter of 2019 compared to 45.3% in the same quarter last year. The higher gross profit ratio during the current quarter is primarily attributable to new product launches and pricing initiatives.

Selling, general and administrative expenses. Selling, general and administrative ("SG&A") expenses were $84.0 million during the second quarter of 2019, an increase of $2.0 million or 2.5%, compared to $82.0 million in the second quarter of 2018. Overall, selling, general and administrative expenses were 24.0% of net sales in the second quarter of 2019, compared to 24.2% of net sales in the second quarter of 2018.

Please refer to the Selling, general and administrative expenses table for a reconciliation of the period over period expense change.

Selling, general, and administrative expenses (Percent Change)	**Three Months Ended June 30, 2019 versus June 30, 2018 Consolidated**
GAAP reported change	2.5%
Currency translation effects	2.2%
Constant currency change	4.7%
Less: Acquisitions and related strategic transaction costs	(3.6)%
Organic constant currency change	1.1%

Note: Organic constant currency change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency change in selling, general, and administrative expenses is calculated by deducting the percentage impact from acquisitions and related strategic transaction costs as well as the currency translation effects from the overall percentage change in selling, general, and administrative expense. Management believes excluding acquisitions and currency translation effects provides investors with a greater level of clarity into spending levels on a year-over-year basis.

Research and development expense. Research and development expense was $14.3 million during the second quarter of 2019, an increase of $0.4 million, compared to $13.9 million during the second quarter of 2018. Research and development expense was 4.1% of net sales in both the second quarter of 2019 and 2018. We continue to develop new products for global safety markets, including the upcoming launch of the Altair io 360, which is a first-of-its-kind gas detection for area monitoring. During the second quarter of 2019, we capitalized $1.1 million of software development costs.

Restructuring charges. During the second quarter of 2019, the Company recorded restructuring charges of $3.5 million, primarily related to a non-cash settlement charge associated with the closure of our pension plan in the U.K. as well as footprint rationalization and other restructuring programs associated with our ongoing initiatives to drive profitable growth in our International segment. This compared to restructuring charges of $2.3 million during the second quarter of 2018, primarily related to severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth in Europe and a review of the Company's legal structure to evaluate our U.S. and Canadian operations to better facilitate the execution of our corporate strategy.

Currency exchange. Currency exchange losses were $1.3 million in the second quarter of 2019 compared to $0.8 million in the second quarter of 2018. Currency exchange losses in both periods were related to foreign currency exposure on unsettled inter-company balances. Refer to Note 16—Derivative Financial Instruments to the unaudited condensed consolidated financial statements in Part I Item I of this Form 10-Q, for information regarding our currency exchange rate risk management strategy.

Product liability expense. Product liability expense for the three months ended June 30, 2019 was $3.5 million and relates primarily to defense costs incurred for uninsured asserted cumulative trauma product liability claims. This compared to $8.0 million during the same period in 2018 and relates primarily to defense costs incurred as well as an adjustment to our estimated
insurance receivables.

GAAP operating income. Consolidated operating income for the second quarter of 2019 was $54.5 million compared to consolidated operating income of $46.8 million in the same period last year. The increase in operating results was primarily driven by higher sales volumes as discussed above as well as lower product liability expense.

Adjusted operating income. Americas adjusted operating income for the second quarter of 2019 was $57.7 million, an increase of $7.9 million, or 16%, compared to $49.8 million in the prior year quarter. The increase was related to the higher level of sales, improved margins driven primarily by new product launches and pricing initiatives as well as the improved leverage of SG&A.

International adjusted operating income for the second quarter of 2019 was $15.1 million, a decrease of $0.8 million, or 5%, compared to $15.9 million in the prior year quarter. The decrease in adjusted operating income is primarily attributable lower level of sales volumes.

Corporate segment adjusted operating loss for the second quarter of 2019 was $8.4 million, an increase of $0.7 million, or 10%, compared to an adjusted operating loss of $7.7 million in the second quarter of 2018, reflecting higher variable compensation expense partially offset by lower legal expenses.

The following tables represent a reconciliation from GAAP operating income to adjusted operating income (loss) and adjusted EBITDA. Adjusted operating margin % is calculated as adjusted operating income (loss) divided by net sales and adjusted EBITDA margin % is calculated as adjusted EBITDA divided by net sales.

Adjusted operating income		Three Months Ended June 30, 2019		
(In thousands)	**Americas**	**International**	**Corporate**	**Consolidated**
Net sales	$ 231,389	$ 118,286	—	$ 349,675
GAAP operating income				54,478
Restructuring charges (Note 4)				3,522
Currency exchange losses, net (Note 6)				1,290
Product liability expense (Note 18)				3,529
Strategic transaction costs (Note 19)				1,529
Adjusted operating income (loss)	57,689	15,072	(8,413)	64,348
Adjusted operating margin %	24.9%	12.7%		
Depreciation and amortization				9,466
Adjusted EBITDA	63,842	18,288	(8,316)	73,814
Adjusted EBITDA %	27.6%	15.5%		

Adjusted operating income		Three Months Ended June 30, 2018		
(In thousands)	**Americas**	**International**	**Corporate**	**Consolidated**
Net sales	$ 215,339	$ 123,992	—	$ 339,331
GAAP operating income				46,797
Restructuring charges (Note 4)				2,335
Currency exchange gains, net (Note 6)				815
Product liability expense (Note 18)				8,018
Strategic transaction costs (Note 19)				58
Adjusted operating income (loss)	49,838	15,853	(7,668)	58,023
Adjusted operating margin %	23.1%	12.8%		
Depreciation and amortization				9,536
Adjusted EBITDA	55,894	19,233	(7,568)	67,559
Adjusted EBITDA %	26.0%	15.5%		

Note: Adjusted operating income (loss) and adjusted EBITDA are a non-GAAP financial measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is reconciled above to the nearest GAAP financial measure, Operating income (loss), and excludes restructuring, currency exchange, product liability expense and strategic transaction costs. Adjusted EBITDA is reconciled above to the nearest GAAP financial measure, Operating income (loss) and excludes depreciation and amortization expense.

Total other expense, net. Total other expense, net, for the second quarter of 2019 was $1.1 million, compared to $3.5 million for the same period in 2018, primarily due to lower interest expense and higher interest income.

Income taxes. The reported effective tax rate for the second quarter of 2019 was 24.8% compared to 22.8% for the second quarter of 2018, which included 2.2% of a tax benefit related to share-based payments related to the application of ASU

2016-09.

Net income attributable to MSA Safety Incorporated. Net income was $39.8 million for the second quarter of 2019, or $1.01 per diluted share compared to income of $33.2 million, or $0.85 per diluted share, for the same period last year.

Six Months Ended June 30, 2019, Compared to Six Months Ended June 30, 2018

Net Sales. Net sales for the six months ended June 30, 2019, were $675.7 million compared to $665.2 million for the six months ended June 30, 2018. Please refer to the Net Sales table for a reconciliation of the period over period sales change.

Net Sales	**Six Months Ended June 30,**		**Dollar**	**Percent**
(In millions, except percentage amounts)	**2019**	**2018**	**Increase/ (Decrease)**	**Increase/(Decrease)**
Consolidated	**$675.7**	**$665.2**	**$10.5**	**1.6%**
Americas	445.1	424.5	20.6	4.9%
International	230.6	240.7	(10.1)	(4.2)%

Net Sales	**Six Months Ended June 30, 2019 versus June 30, 2018**		
(Percent Change)	**Americas**	**International**	**Consolidated**
GAAP reported sales change	**4.9%**	**(4.2)%**	**1.6%**
Currency translation effects	0.9%	6.2%	2.8%
Constant currency sales change	5.8%	2.0%	4.4%

Note: Constant currency sales change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency sales change is calculated by removing the percentage impact of currency translation effects from the overall percentage change in net sales.

Net sales for the Americas segment were $445.1 million for the six months ended June 30, 2019, an increase of $20.6 million, or 4.9%, compared to $424.5 million for the same period in 2018, due to stronger core product sales. During the six months ended June 30, 2019, constant currency sales in the Americas segment increased 5.8% compared to the prior year period, driven primarily by growth across our portfolio with notable strength in fixed gas and flame detection and fall protection.

Net sales for the International segment were $230.6 million for the six months ended June 30, 2019, a decrease of $10.1 million, or 4.2%, compared to $240.7 million for the same period in 2018. During the six months ended June 30, 2019, constant currency sales in the International segment increased 2.0% compared to the prior year period, as we recognized higher sales throughout our core product portfolio partially offset by weaker non-core sales primarily in Europe on lower ballistic helmet sales.

Refer to Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item I of this Form 10-Q, for information regarding sales by product group.

We continue to target mid-single digit constant currency revenue growth for 2019.

Gross profit. Gross profit for the six months ended June 30, 2019, was $311.1 million, an increase of $9.9 million, or 3%, compared to $301.2 million for the same period in 2018. The ratio of gross profit to net sales was 46.0% during the six months ended June 30, 2019, compared to 45.3% in the same period last year. The higher gross profit ratio during the current period is primarily attributable to new product launches and pricing initiatives.

Selling, general and administrative expenses. Selling, general and administrative ("SG&A") expenses were $162.4 million during the six months ended June 30, 2019, a increase of $0.2 million compared to $162.2 million during the same period in 2018. Overall, SG&A expenses were 24.0% of net sales during the six months ended June 30, 2019, compared to 24.4% of net sales during the same period in 2018.

Please refer to the Selling, general and administrative expenses table for a reconciliation of the period over period expense change.

Selling, general, and administrative expenses (Percent Change)	Six Months Ended June 30, 2019 versus June 30, 2018 Consolidated
GAAP reported change	0.1%
Currency translation effects	2.7%
Constant currency change	2.8%
Less: Acquisitions and related strategic transaction costs	(2.2)%
Organic constant currency change	0.6%

Note: Organic constant currency change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency change in selling, general, and administrative expenses is calculated by deducting the percentage impact from acquisitions and related strategic transaction costs as well as the currency translation effects from the overall percentage change in selling, general, and administrative expense. Management believes excluding acquisitions and currency translation effects provides investors with a greater level of clarity into spending levels on a year-over-year basis.

Research and development expense. Research and development expense was $28.0 million during the six months ended June 30, 2019, an increase of $1.5 million, or 6%, compared to $26.5 million during the same period in 2018. Research and development expense was 4.1% of net sales during the six months ended June 30, 2019, compared to 4.0% of net sales during the same period in 2018. We continue to develop new products for global safety markets, including the newly unveiled MSA connected firefighter product powered by LUNAR, which was introduced in early 2019, as well as the upcoming launch of the Altair io 360, which is a first-of-its-kind gas detection for area monitoring. During six months ended June 30, 2019, we capitalized $1.9 million of software development costs.

Restructuring charges. During the six months ended June 30, 2019, the Company recorded restructuring charges of $9.4 million, related to footprint rationalization and other restructuring programs associated with our ongoing initiatives to drive profitable growth in our International segment. These programs will continue to be executed in the third and fourth quarters of 2019. These activities are expected to provide $4 million to $5 million of annual savings, beginning in late 2019 and into 2020. Additionally, we recognized a non-cash settlement charge associated with the closure of our pension plan in the U.K. This compared to restructuring charges of $7.6 million during the same period in 2018, primarily related to the legal and operational realignment of our U.S. and Canadian operations and severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth in Europe.

Currency exchange. Currency exchange losses were $18.3 million in the six months ended June 30, 2019, compared to $2.8 million during the same period in 2018. The increase in currency exchange losses was primarily due to the recognition of non-cash cumulative translation losses of approximately $15.4 million as a result of the approval of our plan to close our South Africa affiliates during the first quarter of 2019. This charge is related to the historical translation of the elements of the financial statements for the business from the functional currency to the U.S. Dollar. The translation impact has been historically recorded as currency translation adjustment (“CTA”), a separate component of accumulated other comprehensive loss within the equity section of the unaudited Condensed Consolidated Balance Sheet. The remaining currency exchange losses in both periods were related to foreign currency exposure on unsettled inter-company balances. Refer to Note 16—Derivative Financial Instruments to the unaudited condensed consolidated financial statements in Part I Item I of this Form 10-Q for information regarding our currency exchange rate risk management strategy.

Product liability expense. Product liability expense for the six months ended June 30, 2019, was $6.4 million, which related primarily to defense costs incurred for uninsured asserted cumulative trauma product liability claims. This compared to $10.8 million during the same period in 2018, which relates primarily to defense costs incurred as well as an adjustment to our estimated insurance receivables.

GAAP operating income. Consolidated operating income for the six months ended June 30, 2019, was $86.6 million compared to operating income of $91.2 million in the same period in 2018. The decrease in operating results was driven by currency exchange losses as discussed above, partially offset by higher sales volumes as disclosed above.

Adjusted operating income. Americas adjusted operating income for the six months ended June 30, 2019, was $112.5 million, an increase of $12.6 million, or 13%, compared to $99.9 million during the same period in 2018. The increase was related to the higher level of sales, improved margins driven primarily by new product launches and pricing initiatives as well as improved leverage of SG&A.

International adjusted operating income for the six months ended June 30, 2019, was $26.1 million, a decrease of $2.5 million, or 9%, compared to $28.6 million during the same period in 2018. The decrease in adjusted operating income is primarily attributable to a lower level of sales volumes.

Corporate segment adjusted operating loss for the six months ended June 30, 2019, was $16.0 million, an increase of $0.1 million, compared to an adjusted operating loss of $15.9 million during the same period in 2018.

The following tables represent a reconciliation from GAAP operating income to adjusted operating income (loss) and adjusted EBITDA. Adjusted operating margin % is calculated as adjusted operating income (loss) divided by net sales and adjusted EBITDA margin % is calculated as adjusted EBITDA divided by net sales.

Adjusted operating income	**Six Months Ended June 30, 2019**			
(In thousands, except percentage amounts)	**Americas**	**International**	**Corporate**	**Consolidated**
Net sales	$ 445,076	$ 230,637	$ —	$ 675,713
GAAP operating income				86,638
Restructuring charges (Note 4)				9,353
Currency exchange losses, net (Note 6)				18,251
Product liability expense (Note 18)				6,425
Strategic transaction costs (Note 19)				1,985
Adjusted operating income (loss)	112,492	26,112	(15,952)	122,652
Adjusted operating margin %	25.3%	11.3%		
Depreciation and amortization				18,792
Adjusted EBITDA	124,742	32,459	(15,757)	141,444
Adjusted EBITDA %	28.0%	14.1%		

Adjusted operating income	**Six Months Ended June 30, 2018**			
(In thousands, except percentage amounts)	**Americas**	**International**	**Corporate**	**Consolidated**
Net sales	$ 424,468	$ 240,757	$ —	$ 665,225
GAAP operating income				91,232
Restructuring charges (Note 4)				7,609
Currency exchange losses, net (Note 6)				2,823
Product liability expense (Note 18)				10,842
Strategic transaction costs (Note 19)				152
Adjusted operating income (loss)	99,924	28,631	(15,897)	112,658
Adjusted operating margin %	23.5%	11.9%		
Depreciation and amortization				$ 19,207
Adjusted EBITDA	$ 112,119	$ 35,441	$ (15,695)	$ 131,865
Adjusted EBITDA %	26.4%	14.7%		

Note: Adjusted operating income (loss) and adjusted EBITDA are a non-GAAP financial measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is reconciled above to the nearest GAAP financial measure, Operating income (loss), and excludes restructuring, currency exchange, product liability expense and strategic transaction costs. Adjusted EBITDA is reconciled above to the nearest GAAP financial measure, Operating income (loss) and excludes depreciation and amortization expense.

Total other expense, net. Total other expense, net, during the six months ended June 30, 2019, was $0.9 million, compared to other expense, net, of $5.9 million during the same period in 2018, due to lower interest expense as a result of a favorable adjustment related to a foreign uncertain tax position for which the statute of limitations has expired. We expect full-year 2019 interest expense to be between $15 million and $17 million.

Income taxes. The reported effective tax rate for the six months ended June 30, 2019, was 25.9%, which included an expense of 4.2% due to non-deductible foreign currency exchange losses on entity closures compared to 22.7% for the same period in 2018.

Net income attributable to MSA Safety Incorporated. Net income was $63.0 million for the six months ended June 30, 2019, or $1.61 per diluted share compared to income of $65.6 million, or $1.69 per diluted share, for the same period last year.

Non-GAAP Financial Information

We may provide information regarding financial measures such as organic constant currency changes, financial measures excluding the impact of acquisitions and related strategic transaction costs, adjusted operating income, adjusted operating margin percentage, adjusted EBITDA and adjusted EBITDA margin percentage, which are not recognized terms under U.S. GAAP and do not purport to be alternatives to net sales, selling, general and administrative expense, operating income or net income as a measure of operating performance. We believe that the use of these non-GAAP financial measures provide investors with additional useful information and provide a more complete understanding of the underlying results. Because not all companies use identical calculations, these presentations may not be comparable to similarly titled measures from other companies. For more information about these non-GAAP measures and a reconciliation to the nearest U.S. GAAP measure, please refer to the reconciliations referenced above in Management's Discussion & Analysis section and in Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q.

We may also provide financial information on a constant currency basis, which is a non-GAAP financial measure. These references to a constant currency basis do not include operational impacts that could result from fluctuations in foreign currency rates, which are outside of management's control. To provide information on a constant currency basis, the applicable financial results are adjusted by translating current and prior period results in local currency to a fixed foreign exchange rate. This approach is used for countries where the functional currency is the local country currency. This information is provided so that certain financial results can be viewed without the impact of fluctuations in foreign currency rates, thereby facilitating period-to-period comparisons of business performance. Constant currency information is not recognized under U.S. GAAP and it is not intended as an alternative to U.S. GAAP measures.

LIQUIDITY AND CAPITAL RESOURCES

Our primary source of liquidity is operating cash flows, supplemented by borrowings. Our principal liquidity requirements are for working capital, capital expenditures, principal and interest payments on debt, dividend payments and acquisitions. At June 30, 2019, approximately 32% of our long-term debt is at fixed interest rates with repayment schedules through 2031. The remainder of our long-term debt is at variable rates on an unsecured revolving credit facility that is due in 2023. At June 30, 2019, approximately 81% of our borrowings are denominated in U.S. dollars.

At June 30, 2019, we had cash, cash equivalents and restricted cash totaling $112.0 million, which included $92.9 million of cash and cash equivalents held by our foreign subsidiaries. Cash, cash equivalents and restricted cash decreased $28.6 million during the six months ended June 30, 2019, compared to decreasing $18.0 million during the same period in 2018. We continue to employ a balanced capital allocation strategy that prioritizes growth investments, funding our dividend and servicing debt obligations.

Operating activities. Operating activities provided cash of $37.5 million during the six months ended June 30, 2019, compared to providing $65.4 million during the same period in 2018. The decrease in operating cash flows during the period was primarily attributable to higher product liability payments and a higher use of cash for working capital to support our higher level of sales and backlog. We made product liability payments of $22.9 million, net of collections on insurance receivables, in the six months ended June 30, 2019, compared to net payments of $7.7 million in the same period of 2018. Historically, cumulative trauma liability payments were funded with the Company's operating cash flow, pending resolution of disputed insurance coverage. For more than a decade, we have funded product liability settlements from operating cash flow. The vast majority of the insurance receivable and notes receivable - insurance companies balances at June 30, 2019, is attributable to reimbursement believed to be due under the terms of signed agreements with insurers and are not currently subject to litigation. While the timing of cash flows for product liability and insurance receivable can and do vary from quarter to quarter, we have been successful in establishing cash flow streams that have allowed us to fund these liabilities without a material impact on our capital allocation priorities.

Investing activities. Investing activities used cash of $63.9 million during the six months ended June 30, 2019, compared to using $5.8 million during the same period in 2018. The acquisition of Sierra Monitor Corporation, purchase of short-term investments, net of proceeds from maturities and capital expenditures drove cash outflows from investing activities during the six months ended June 30, 2019 while capital expenditures drove cash outflows from investing activities in the same period in 2018. During 2019, we incurred capital expenditures associated with software development and other growth programs. We plan to invest approximately $35 million in capital expenditures for the full year 2019.

Financing activities. Financing activities used cash of $1.3 million during the six months ended June 30, 2019, compared to using $69.5 million during the same period in 2018. During the six months ended June 30, 2019, we had net proceeds on long-term debt of $37.0 million primarily to fund the Sierra Monitor Corporation acquisition as compared to net payments of $42.5 million during the same period in 2018. We paid cash dividends of $30.9 million during the six months ended June 30, 2019, compared to $28.0 million in the same period in 2018. We also used cash of $3.3 million during the six months ended June 30, 2019 to repurchase shares under our 2015 stock repurchase program.

CUMULATIVE TRANSLATION ADJUSTMENTS

The position of the U.S. dollar relative to international currencies at June 30, 2019, resulted in no net translation gains or losses being recorded to the cumulative translation adjustments shareholders' equity account during the six months ended June 30, 2019, compared to a translation loss of $14.4 million during the same period in 2018. The translation loss during the six months ended June 30, 2018, was primarily related to the strengthening of the U.S. dollar relative to the euro and Mexican peso.

During the six months ended June 30, 2019, we recognized approximately $18.3 million of currency exchange losses, net in our unaudited Condensed Consolidated Statement of Income of which $15.4 million relates to non-cash currency exchange losses due primarily to an approved plan to close our South Africa affiliates. This charge is related to the historical translation of the elements of the financial statements for the business from the functional currency to the U.S. Dollar. The translation impact has been historically recorded as currency translation adjustment (“CTA”), a separate component of accumulated other comprehensive loss within the equity section of the unaudited Condensed Consolidated Balance Sheet.

Inflation in Argentina in the second quarter of 2018 increased at an accelerated rate and effective June 30, 2018, Argentina’s economy is considered highly inflationary. Beginning July 1, 2018, under a highly-inflationary basis of accounting, the Company’s monetary assets (such as cash and receivables) and monetary liabilities (such as payables and accruals) at its operations in Argentina are remeasured at the end of each reporting period with such entries recorded to the unaudited Condensed Consolidated Statement of Income rather than to accumulated other comprehensive loss on the unaudited Condensed Consolidated Balance Sheet. Because the Argentinian peso is subject to fluctuation, such remeasurement will increase the volatility of reported results of operations in future periods. However, as the Company has a small presence, including one manufacturing plant in the country, the impact from the highly-inflationary basis of accounting is not material to our unaudited condensed consolidated financial statements.

Brexit has caused, and may continue to create, volatility in global stock markets and regional and global economic uncertainty particularly in the U.K. financial and banking markets. Weakening of economic conditions or economic uncertainties tend to harm our business, and if such conditions worsen in the U.K. or in the rest of Europe, it may have an adverse effect on our consolidated operations and sales. The Company continues to monitor the economic situation related to Brexit and current analysis indicates that exposure in our supply chain related to additional duties and sourcing costs is not material. MSA has approximately $45 million of annual sales denominated in the British pound which are subject to exchange rate risk associated with any volatility in the British pound. Our debt in the U.K. associated with the Latchways acquisition was $69.6 million at June 30, 2019 and is denominated in British pounds. Because the debt is denominated in local currency, the value of the debt and local cash flows are aligned with respect to movements in the exchange rate between the British pound and U.S. dollar.

COMMITMENTS AND CONTINGENCIES

We made contributions of $3.5 million to our pension plans during the six months ended June 30, 2019. We expect to make total contributions of approximately $7.1 million to our pension plans in 2019 which are primarily associated with our International segment.

The Company had outstanding bank guarantees and standby letters of credit with banks as of June 30, 2019, totaling $9.8 million, of which $3.0 million related to the senior revolving credit facility. These letters of credit serve to cover customer requirements in connection with certain sales orders and insurance companies. The Company is also required to provide cash collateral in connection with certain arrangements. At June 30, 2019, the Company has $0.5 million of restricted cash in support of these arrangements.

We have purchase commitments for materials, supplies, services, and property, plant and equipment as part of our ordinary conduct of business.

Please refer to Note 18—Contingencies to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q for further discussion on the Company's single incident and cumulative trauma product liabilities.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP). The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and the related disclosures. We evaluate these estimates and judgments on an on-going basis based on historical experience and various assumptions that we believe to be reasonable under the circumstances. However, different amounts could be reported if we had used different assumptions and in light of different facts and circumstances. Actual amounts could differ from the estimates and judgments reflected in our condensed consolidated financial statements.

The more critical judgments and estimates used in the preparation of our consolidated financial statements are discussed in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the year ended December 31, 2018.

Refer to Note 14—Leases to the unaudited condensed consolidated financial statements for an update to the accounting policy for leases as a result of the adoption of ASU 2016-02, *Leases*, on January 1, 2019.

RECENTLY ADOPTED AND RECENTLY ISSUED ACCOUNTING STANDARDS

Please refer to Note 2— Recently Adopted and Recently Issued Accounting Standards to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the risk of adverse changes in the value of a financial instrument caused by changes in currency exchange rates, interest rates and equity prices. We are exposed to market risks related to currency exchange rates and interest rates.

Currency exchange rate sensitivity. We are subject to the effects of fluctuations in currency exchange rates on various transactions and on the translation of the reported financial position and operating results of our non-U.S. companies from local currencies to U.S. dollars. A hypothetical 10% strengthening or weakening of the U.S. dollar would decrease or increase our reported sales and net income by approximately $14.7 million or 2.2% and $2.6 million or 4.1%, respectively, for the three months ended June 30, 2019.

When appropriate, we may attempt to limit our transactional exposure to changes in currency exchange rates through contracts or other actions intended to reduce existing exposures by creating offsetting currency exposures. At June 30, 2019, we had open foreign currency forward contracts with a U.S. dollar notional value of $74.8 million. A hypothetical 10% strengthening or weakening of the U.S. dollar would result in a $7.5 million increase or decrease in the fair value of these contracts at June 30, 2019.

Interest rates. We are exposed to changes in interest rates primarily as a result of borrowing and investing activities used to maintain liquidity and fund business operations.

At June 30, 2019, we had $129.8 million of fixed rate debt which matures at various dates through 2031. The incremental increase in the fair value of fixed rate long-term debt resulting from a hypothetical 10% decrease in interest rates would be approximately $10.2 million. However, our sensitivity to interest rate declines and the corresponding increase in the fair value of our debt portfolio would unfavorably affect earnings and cash flows only to the extent that we elected to repurchase or retire all or a portion of our fixed rate debt portfolio at prices above carrying values.

At June 30, 2019, we had $270.3 million of variable rate borrowings under our revolving credit facility. A 100 basis point increase or decrease in interest rates could impact our future earnings under our current capital structure.

Item 4. Controls and Procedures

(a) *Evaluation of disclosure controls and procedures.* Based on their evaluation as of the end of the period covered by this Form 10-Q, the Company's principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and (ii) accumulated and communicated to our management, including the principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding disclosure.

(b) *Changes in internal control*. There were no changes in the Company's internal control over financial reporting that occurred during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1A. Risk Factors

Claims of injuries from our products, product defects or recalls of our products could have a materially adverse effect on our business, operating results, financial condition and liquidity.

MSA and its subsidiaries face an inherent business risk of exposure to product liability claims arising from the alleged failure of our products to prevent the types of personal injury or death against which they are designed to protect. In the event the parties using our products are injured or any of our products prove to be defective, we could be subject to claims with respect to such injuries. In addition, we may be required to or may voluntarily recall or redesign certain products that could potentially be harmful to end users. Any claim or product recall that results in significant expense or negative publicity against us could have a material adverse effect on our business, operating results, financial condition and liquidity, including any successful claim brought against us in excess or outside of available insurance coverage.

Our subsidiary, Mine Safety Appliances Company, LLC, may experience losses from cumulative trauma product liability claims. The inability to collect insurance receivables and the transition to becoming largely self-insured for cumulative trauma product liability claims could have a material adverse effect on our business, operating results, financial condition and liquidity.

Our subsidiary, Mine Safety Appliances Company, LLC ("MSA LLC") was named as a defendant in 1,552 cumulative trauma lawsuits comprised of 2,450 claims at June 30, 2019. Cumulative trauma product liability claims involve exposures to harmful substances (e.g., silica, asbestos and coal dust) that occurred years ago and may have developed over long periods of time into diseases such as silicosis, asbestosis, mesothelioma or coal worker's pneumoconiosis. The products at issue were manufactured many years ago and are not currently offered by MSA LLC. A reserve has been established with respect to cumulative trauma product liability claims currently asserted and estimated incurred but not reported ("IBNR") cumulative trauma product liability claims. Because our cumulative trauma product liability risk is subject to inherent uncertainties, including unfavorable trial rulings or developments, an increase in newly filed claims, or more aggressive settlement demands, and since MSA LLC is largely self-insured, there can be no certainty that MSA LLC may not ultimately incur losses in excess of presently recorded liabilities. These losses could have a material adverse effect on our business, operating results, financial condition and liquidity. We will adjust the reserve relating to cumulative trauma product liability claims from time to time based on whether the actual numbers, types and settlement values of claims asserted differ from current projections and estimates or there are significant changes in the facts underlying the assumptions used in establishing the reserve. These adjustments may be material and could materially impact future periods in which the reserve is adjusted.

In the normal course of business, MSA LLC makes payments to settle these types of cumulative trauma product liability claims and for related defense costs, and records receivables for the estimated amounts believed to be recoverable under insurance. MSA LLC has recorded insurance receivables totaling $59.9 million and notes receivables of $60.3 million at June 30, 2019. Since MSA LLC is now largely self-insured for cumulative trauma claims, additional amounts recorded as insurance receivables will be limited and based on calculating the amounts to be reimbursed pursuant to negotiated Coverage-in-Place Agreements. Various factors could affect the timing and amount of recovery of the insurance receivable, including assumptions regarding claims composition (which are relevant to calculating reimbursement under the terms of certain Coverage-In-Place Arrangements) and the extent to which the issuing insurers may become insolvent in the future.

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

(c) Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased As Part of Publicly Announced Plans or Programs	Maximum Number of Shares That May Yet Be Purchased Under the Plans or Programs
April 2019	—	$ —	—	738,014
May 2019	13,269	99.98	12,000	804,232
June 2019	21,465	100.48	21,465	737,905

The share repurchase program authorizes up to $100.0 million in repurchases of MSA common stock in the open market and in private transactions. The share purchase program has no expiration date. The maximum shares that may be purchased is calculated based on the dollars remaining under the program and the respective month-end closing share price. We repurchased 33,465 shares during the quarter ended June 30, 2019, under this program.

Additional shares purchased during the quarter relate to stock compensation transactions.

We do not have any other share repurchase programs.

Item 6. Exhibits

(a) Exhibits

31.1 Certification of Chief Executive Officer pursuant to Rule 13a-14(a)

31.2 Certification of Chief Financial Officer pursuant to Rule 13a-14(a)

32 Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. (S)1350

101.INS XBRL Instance Document

101.SCH XBRL Taxonomy Extension Schema Document

101.CAL XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF XBRL Taxonomy Extension Definition Linkbase Document

101.LAB XBRL Taxonomy Extension Label Linkbase Document

101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

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.

MSA SAFETY INCORPORATED

July 25, 2019

/s/ Kenneth D. Krause

Kenneth D. Krause
Sr. Vice President, Chief Financial Officer and Treasurer
Duly Authorized Officer and Principal Financial Officer

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO RULE 13a-14(a)

I, Nishan J. Vartanian, certify that:

1. I have reviewed this quarterly report on Form 10-Q of MSA Safety Incorporated;

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

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

4. The registrant's other certifying 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.

July 25, 2019	/s/ Nishan J. Vartanian
	Nishan J. Vartanian
	President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO RULE 13a-14(a)

I, Kenneth D. Krause certify that:

1. I have reviewed this quarterly report on Form 10-Q of MSA Safety Incorporated;

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

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

4. The registrant's other certifying 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.

July 25, 2019	/s/ Kenneth D. Krause
	Kenneth D. Krause
	Sr. Vice President, Chief Financial Officer and Treasurer

EXHIBIT 32

CERTIFICATION

Pursuant to 18 U.S.C. (S) 1350, the undersigned officers of MSA Safety Incorporated (the “Company”), hereby certify, to the best of their knowledge, that the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2019 (the “Report”) fully complies with the requirements of Section 13 (a) or 15 (d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

July 25, 2019	/s/ Nishan J. Vartanian
	Nishan J. Vartanian
	President and Chief Executive Officer
	/s/ Kenneth D. Krause
	Kenneth D. Krause
	Sr. Vice President, Chief Financial Officer and Treasurer