

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

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

For the quarter ended September 30, 2017

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 No

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

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a 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

As of October 17, 2017, 38,031,977 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

| (In thousands, except per share amounts) | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|--|----------------------------------|------------|---------------------------------|------------|
| | 2017 | 2016 | 2017 | 2016 |
| Net sales | \$ 296,129 | \$ 278,233 | \$ 850,669 | \$ 853,499 |
| Cost of products sold | 163,630 | 149,471 | 464,842 | 468,177 |
| Gross profit | 132,499 | 128,762 | 385,827 | 385,322 |
| Selling, general and administrative | 72,409 | 72,945 | 222,334 | 227,856 |
| Research and development | 12,351 | 13,116 | 35,282 | 34,623 |
| Restructuring charges (Note 4) | 3,214 | 1,889 | 16,920 | 3,697 |
| Currency exchange losses, net | 562 | 790 | 3,994 | 2,498 |
| Other operating expense (Note 18) | 3,346 | — | 32,956 | — |
| Operating income | 40,617 | 40,022 | 74,341 | 116,648 |
| Interest expense | 3,961 | 4,412 | 10,566 | 12,515 |
| Other income, net | (981) | (2,041) | (2,061) | (3,704) |
| Total other expense, net | 2,980 | 2,371 | 8,505 | 8,811 |
| Income from continuing operations before income taxes | 37,637 | 37,651 | 65,836 | 107,837 |
| Provision for income taxes (Note 10) | 5,411 | 11,329 | 6,306 | 38,866 |
| Income from continuing operations | 32,226 | 26,322 | 59,530 | 68,971 |
| (Loss) income from discontinued operations (Note 19) | — | (1,300) | — | 55 |
| Net income | 32,226 | 25,022 | 59,530 | 69,026 |
| Net income attributable to noncontrolling interests | (160) | (836) | (519) | (2,006) |
| Net income attributable to MSA Safety Incorporated | \$ 32,066 | \$ 24,186 | \$ 59,011 | \$ 67,020 |
| Amounts attributable to MSA Safety Incorporated common shareholders: | | | | |
| Income from continuing operations | \$ 32,066 | \$ 25,486 | \$ 59,011 | \$ 67,475 |
| Loss from discontinued operations (Note 19) | — | (1,300) | — | (455) |
| Net income | \$ 32,066 | \$ 24,186 | \$ 59,011 | \$ 67,020 |
| Earnings per share attributable to MSA Safety Incorporated common shareholders: | | | | |
| Basic | | | | |
| Income from continuing operations | \$ 0.84 | \$ 0.68 | \$ 1.55 | \$ 1.80 |
| Loss from discontinued operations (Note 19) | \$ — | \$ (0.04) | \$ — | \$ (0.01) |
| Net income | \$ 0.84 | \$ 0.64 | \$ 1.55 | \$ 1.79 |
| Diluted | | | | |
| Income from continuing operations | \$ 0.83 | \$ 0.67 | \$ 1.52 | \$ 1.77 |
| Loss from discontinued operations (Note 19) | \$ — | \$ (0.04) | \$ — | \$ (0.01) |
| Net income | \$ 0.83 | \$ 0.63 | \$ 1.52 | \$ 1.76 |
| Dividends per common share | \$ 0.35 | \$ 0.33 | \$ 1.03 | \$ 0.98 |

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

MSA SAFETY INCORPORATED
CONDENSED CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

Unaudited

| (In thousands) | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|--|-------------------------------------|-----------|------------------------------------|-----------|
| | 2017 | 2016 | 2017 | 2016 |
| Net income | \$ 32,226 | \$ 25,022 | \$ 59,530 | \$ 69,026 |
| Other comprehensive income (loss), net of tax: | | | | |
| Foreign currency translation adjustments (Note 6) | 10,021 | (2,411) | 34,888 | (3,519) |
| Pension and post-retirement plan adjustments, net of tax (Note 6) | 2,180 | 1,893 | 6,321 | 5,679 |
| Reclassification from accumulated other comprehensive (loss) into earnings (Note 6) | — | — | — | 4,125 |
| Total other comprehensive income (loss), net of tax | 12,201 | (518) | 41,209 | 6,285 |
| Comprehensive income | 44,427 | 24,504 | 100,739 | 75,311 |
| Comprehensive income attributable to noncontrolling interests | (4,289) | (1,021) | (3,185) | (3,271) |
| Comprehensive income attributable to MSA Safety Incorporated | \$ 40,138 | \$ 23,483 | \$ 97,554 | \$ 72,040 |

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

MSA SAFETY INCORPORATED
CONDENSED CONSOLIDATED BALANCE SHEET

Unaudited

| (In thousands) | September 30, 2017 | December 31, 2016 |
|--|---------------------|---------------------|
| Assets | | |
| Cash and cash equivalents | \$ 112,185 | \$ 113,759 |
| Trade receivables, less allowance for doubtful accounts of \$6,181 and \$5,610 | 226,780 | 209,514 |
| Inventories (Note 3) | 160,280 | 103,066 |
| Prepaid income taxes | 20,618 | 16,378 |
| Notes receivable, insurance companies (Note 18) | 19,295 | 4,180 |
| Prepaid expenses and other current assets | 37,381 | 25,909 |
| Total current assets | <u>576,539</u> | <u>472,806</u> |
| Property, plant and equipment, net (Note 5) | 152,475 | 148,678 |
| Prepaid pension cost | 58,954 | 62,916 |
| Deferred tax assets (Note 10) | 36,094 | 23,240 |
| Goodwill (Note 13) | 417,949 | 333,276 |
| Intangible assets (Note 13) | 185,356 | 77,015 |
| Notes receivable, insurance companies, noncurrent (Note 18) | 59,151 | 63,147 |
| Insurance receivable (Note 18) and other noncurrent assets | 108,699 | 172,842 |
| Total assets | <u>\$ 1,595,217</u> | <u>\$ 1,353,920</u> |
| Liabilities | | |
| Notes payable and current portion of long-term debt, net (Note 12) | \$ 26,667 | \$ 26,666 |
| Accounts payable | 65,589 | 62,734 |
| Employees' compensation | 36,848 | 39,880 |
| Insurance and product liability (Note 18) | 72,739 | 19,438 |
| Income taxes payable (Note 10) | — | 3,889 |
| Other current liabilities | 71,245 | 68,803 |
| Total current liabilities | <u>273,088</u> | <u>221,410</u> |
| Long-term debt, net (Note 12) | 445,717 | 363,836 |
| Pensions and other employee benefits | 172,851 | 157,927 |
| Deferred tax liabilities (Note 10) | 37,347 | 34,044 |
| Other noncurrent liabilities | 45,007 | 15,491 |
| Total liabilities | <u>\$ 974,010</u> | <u>\$ 792,708</u> |
| 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) | 189,145 | 172,681 |
| Treasury shares, at cost (Note 7) | (299,583) | (289,254) |
| Accumulated other comprehensive loss (Note 6) | (191,703) | (230,246) |
| Retained earnings | 915,311 | 901,415 |
| Total MSA Safety Incorporated shareholders' equity | <u>616,739</u> | <u>558,165</u> |
| Noncontrolling interests | 4,468 | 3,047 |
| Total shareholders' equity | <u>621,207</u> | <u>561,212</u> |
| Total liabilities and shareholders' equity | <u>\$ 1,595,217</u> | <u>\$ 1,353,920</u> |

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

MSA SAFETY INCORPORATED
CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

Unaudited

| (In thousands) | Nine Months Ended September 30, | |
|---|---------------------------------|-------------------|
| | 2017 | 2016 |
| Operating Activities | | |
| Net income | \$ 59,530 | \$ 69,026 |
| Depreciation and amortization | 27,665 | 26,651 |
| Restructuring charges (Note 4) | 11,384 | — |
| Stock-based compensation (Note 11) | 9,668 | 8,292 |
| Pension expense (Note 15) | 5,307 | 5,094 |
| Deferred income tax benefit | (9,590) | (184) |
| Loss (gain) on asset dispositions, net | 65 | (1,512) |
| Pension contributions (Note 15) | (4,425) | (4,700) |
| Currency exchange losses, net | 3,994 | 2,516 |
| Other operating expense (Note 18) | 32,956 | — |
| Changes in: | | |
| Trade receivables | 10,108 | 16,215 |
| Inventories (Note 3) | (36,894) | (9,961) |
| Income taxes receivable, prepaid expenses and other current assets | 19,248 | (2,635) |
| Accounts payable and accrued liabilities | (16,096) | (81,856) |
| Other noncurrent assets and liabilities | 76,326 | 4,491 |
| Cash Flow From Operating Activities | 189,246 | 31,437 |
| Investing Activities | | |
| Capital expenditures | (11,730) | (16,146) |
| Acquisition, net of cash acquired (Note 14) | (213,990) | (18,261) |
| Property disposals and other investing (Note 19) | 729 | 17,932 |
| Cash Flow Used in Investing Activities | (224,991) | (16,475) |
| Financing Activities | | |
| Proceeds from short-term debt, net | — | 75 |
| Proceeds from long-term debt (Note 12) | 491,500 | 332,664 |
| Payments on long-term debt (Note 12) | (415,600) | (316,656) |
| Restricted cash | 472 | 1,304 |
| Cash dividends paid | (39,200) | (36,675) |
| Company stock purchases | (16,656) | (1,881) |
| Exercise of stock options | 12,392 | 6,105 |
| Employee stock purchase plan | 282 | 252 |
| Excess tax benefit related to stock plans | — | (434) |
| Other, net | (590) | (1,008) |
| Cash Flow From (Used in) Financing Activities | 32,600 | (16,254) |
| Effect of exchange rate changes on cash and cash equivalents | 1,571 | 1,400 |
| (Decrease) increase in cash and cash equivalents | (1,574) | 108 |
| Beginning cash and cash equivalents | 113,759 | 105,925 |
| Ending cash and cash equivalents | \$ 112,185 | \$ 106,033 |

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

MSA SAFETY INCORPORATED
CONSOLIDATED STATEMENT OF CHANGES IN RETAINED EARNINGS,
ACCUMULATED OTHER COMPREHENSIVE LOSS AND NONCONTROLLING INTERESTS
Unaudited

| (In thousands) | Retained Earnings | Accumulated Other Comprehensive (Loss) |
|---|----------------------|---|
| Balances June 30, 2016 | \$ 877,103 | \$ (202,476) |
| Net income | 25,022 | — |
| Foreign currency translation adjustments | — | (2,411) |
| Pension and post-retirement plan adjustments, net of tax of \$1,046 | — | 1,893 |
| Income attributable to noncontrolling interests | (836) | (185) |
| Common dividends | (12,381) | — |
| Preferred dividends | (10) | — |
| Balances September 30, 2016 | 888,898 | (203,179) |
| Balances June 30, 2017 | 896,621 | (199,775) |
| Net income | 32,226 | — |
| Foreign currency translation adjustments | — | 10,021 |
| Pension and post-retirement plan adjustments, net of tax of \$1,009 | — | 2,180 |
| (Income) loss attributable to noncontrolling interests | (160) | (4,129) |
| Common dividends | (13,366) | — |
| Preferred dividends | (10) | — |
| Balances September 30, 2017 | \$ 915,311 | \$ (191,703) |

| (In thousands) | Retained Earnings | Accumulated Other Comprehensive (Loss) |
|--|----------------------|---|
| Balances December 31, 2015 | \$ 858,553 | \$ (208,199) |
| Net income | 69,026 | — |
| Foreign currency translation adjustments | — | (3,519) |
| Pension and post-retirement plan adjustments, net of tax of \$3,132 | — | 5,679 |
| Income attributable to noncontrolling interests | (2,006) | (1,265) |
| Reclassification from accumulated other comprehensive (loss) into earnings | — | 4,125 |
| Common dividends | (36,645) | — |
| Preferred dividends | (30) | — |
| Balances September 30, 2016 | 888,898 | (203,179) |
| Balances December 31, 2016 | 901,415 | (230,246) |
| Net income | 59,530 | — |
| Foreign currency translation adjustments | — | 34,888 |
| Pension and post-retirement plan adjustments, net of tax of \$3,052 | — | 6,321 |
| (Income) loss attributable to noncontrolling interests | (519) | (2,666) |
| Common dividends | (39,170) | — |
| Preferred dividends | (30) | — |
| Cumulative effect of the adoption of ASU 2016-16 (Note 2) | (5,915) | — |
| Balances September 30, 2017 | \$ 915,311 | \$ (191,703) |

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

MSA SAFETY INCORPORATED
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Unaudited

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, 2016 condensed consolidated balance sheet data was derived from the audited consolidated balance sheet but does not include all disclosures required by generally accepted accounting principles (GAAP). This Form 10-Q report should be read in conjunction with MSA's Form 10-K for the year ended December 31, 2016, which includes all disclosures required by GAAP.

Reclassifications - Certain reclassifications of prior year's data have been made to conform to the current year presentation. These reclassifications relate to how amounts are classified within the operating section of the Condensed Consolidated Statement of Cash Flows but do not change the overall cash flow from operating activities for the prior year as previously reported.

Note 2— Recently Adopted and Recently Issued Accounting Standards

In May 2014, the FASB issued ASU 2014-09, *Revenue with Contracts from Customers*. This ASU establishes a single revenue recognition model for all contracts with customers based on recognizing revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services, eliminates industry specific requirements, and expands disclosure requirements. This ASU is required to be adopted beginning January 1, 2018. Our revenue streams include agreements with distributors and agreements with end users, including governmental entities. The Company continues to evaluate the impact that the adoption of this ASU will have on the consolidated financial statements, including the timing of revenue recognition associated with certain customized products. We have conducted a risk assessment and have provided numerous training sessions to begin educating individuals throughout the business on the requirements of the new standard. We have substantially completed our contract analysis and the adoption of ASU 2014-09 is not expected to have a material impact on our consolidated financial position or results of operations. Based on the evaluation of our current contracts and revenue streams, we anticipate they will be recorded consistently under both existing GAAP and the new standard. As such, we do not expect to record an adjustment on January 1, 2018 under the modified retrospective method of adoption. The majority of our revenue transactions are not accounted for under industry-specific guidance that will be superseded by the ASU and generally consist of a single performance obligation to transfer promised goods or services. We will continue to hold training sessions throughout the rest of 2017 and have drafted a new accounting policy to incorporate the guidance within the new standard into our revenue recognition policies to be applied in 2018 upon adoption of the new standard and going forward. The FASB has issued, and may issue in the future, interpretive guidance which may cause our evaluation to change. We are currently drafting enhanced disclosures surrounding revenue recognition.

In April 2015, the FASB issued ASU 2015-04, *Retirement Benefits - Practical Expedient for the Measurement Date of an Employer's Defined Benefit Obligation and Plan Assets*. This ASU allows entities with a fiscal year end that does not coincide with a month end to use the closest month end for measurement purposes. This ASU also allows entities that have a significant event in an interim period that calls for a remeasurement of defined benefit plan assets and obligations to use the month end date that is closest to the date of the significant event. This ASU was adopted on January 1, 2016. The adoption of this ASU did not have a material effect on our consolidated financial statements.

In July 2015, the FASB issued ASU 2015-11, *Simplifying the Measurement of Inventory*. This ASU was adopted on January 1, 2017. This ASU applies only to inventory measured using the first-in, first-out (FIFO) or average cost methods and requires inventory to be measured at the lower of cost and net realizable value (NRV). This ASU replaces market with NRV, defined as estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. This eliminates the need to determine and consider replacement cost or NRV less an approximately normal profit margin when measuring inventory. The adoption of this ASU did not have a material effect on our consolidated financial statements.

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 will be effective beginning January 1, 2019. The Company is working to develop a transition plan and continues to evaluate the impact that the adoption of this ASU will have on the consolidated financial statements. During the third quarter of 2017, we conducted a survey to identify all leases across the organization and are currently working to obtain all lease contracts to accumulate the necessary information for adoption. We have identified that a majority of our leases fall into one of three categories: office equipment, real estate and vehicles. We have also identified that most office equipment and vehicle leases utilize standard master leasing contracts that have similar terms. At a minimum, total assets and total liabilities will increase in the period the ASU is adopted. At September 30, 2017, the Company's undiscounted future minimum rent commitments under noncancellable operating leases were approximately \$41.0 million. We will adopt the standard using the modified retrospective approach and are still evaluating whether we will elect the practical expedients allowed in the standard.

In March 2016, the FASB issued ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting*. This ASU simplifies the accounting for many aspects associated with share-based payment accounting including income taxes and the use of forfeiture rates. This ASU was adopted on January 1, 2017. The provisions of this ASU which impacted us included a requirement that all excess tax benefits and deficiencies that pertain to share-based payment arrangements be recognized as a component of income tax expense rather than as a component of shareholders' equity. The Company expects this to create volatility in its effective tax rate on a go-forward basis as the impact is treated as a discrete item within our quarterly tax provision. The extent of excess tax benefits/deficiencies is subject to variation in our stock price and timing/extent of stock-based compensation share vestings and employee stock option exercises. This ASU also removes the impact of the excess tax benefits and deficiencies from the calculation of diluted earnings per share and no longer requires a presentation of excess tax benefits and deficiencies related to the vesting and exercise of share-based compensation as both an operating outflow and financing inflow on the statement of cash flows. We have applied all of these changes on a prospective basis and therefore, prior years were not adjusted. Additionally, this ASU allows for an accounting policy election to estimate the number of awards that are expected to vest or account for forfeitures when they occur. We elected to maintain our current forfeitures policy and will continue to include an estimate of those forfeitures when recognizing stock-based compensation expense. This ASU also requires cash payments to tax authorities when an employer uses a net-settlement feature to withhold shares to meet statutory tax withholding provisions to be presented as a financing activity (eliminating previous diversity in practice). Adoption of this ASU resulted in an additional discrete tax benefit of approximately \$6.9 million during the nine months ended September 30, 2017.

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 receivables. This ASU will be effective beginning in 2020. The Company is currently evaluating the impact that the adoption of this ASU will have on the consolidated financial statements and expects that adoption will result in increased disclosure.

In August 2016, the FASB issued ASU 2016-15, *Classification of Certain Cash Payments and Cash Receipts*. This ASU clarifies how certain cash receipts and cash payments are presented and classified in the statement of cash flows. This ASU will be effective beginning in 2018. The Company is currently evaluating the impact that the adoption of this ASU will have on the consolidated financial statements.

In October 2016, the FASB issued ASU 2016-16, *Intra-entity Transfers of Assets Other than Inventory*. This ASU states that an entity should recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. This ASU was early adopted on January 1, 2017 using the modified retrospective approach which resulted in a \$5.9 million cumulative-effect adjustment directly to retained earnings for any previously deferred income tax effects.

In November 2016, the FASB issued ASU 2016-18, *Restricted Cash*. This ASU requires that amounts generally described as restricted cash and restricted cash equivalents are included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. This ASU is effective beginning in 2018 to be adopted on a retrospective basis and early adoption is permitted. The Company is currently evaluating the impact that the adoption of this ASU will have on the consolidated financial statements.

In January 2017, the FASB issued ASU 2017-01, *Business Combinations - Clarifying the Definition of a Business*. This ASU provides further guidance for identifying whether a set of assets and activities is a business by providing a screen outlining that when substantially all of the fair value of the gross assets acquired (or disposed of) is concentrated in a single identifiable asset or a group of similar identifiable assets, the set is not a business. This ASU is effective beginning in 2018 and will be applied prospectively. The adoption of this ASU may have a material effect on our consolidated financial statements in the event that we have an acquisition or disposal that falls within this screen.

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. This ASU is effective beginning in 2019 and early adoption is permitted for interim or annual goodwill impairment tests performed after January 1, 2017. The adoption of this ASU may have a material effect on our consolidated financial statements in the event that we determine that goodwill for any of our reporting units is impaired.

In March 2017, the FASB issued ASU 2017-07, *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Post-retirement Benefit Cost*, to improve the presentation of net periodic pension and net periodic post-retirement benefit cost. This ASU requires companies to present the service cost component of net periodic benefit cost in the same income statement line item as other compensation costs arising from services rendered during the period. Only the service cost component will be eligible for capitalization in assets. Additionally, this ASU requires that companies present the other components of the net periodic benefit cost separately from the line item that includes the service cost and outside of any subtotal of income from operations, if one is presented. This ASU is effective for annual periods beginning after December 15, 2017 and early adoption is permitted. The Company plans to adopt the ASU on January 1, 2018 and is currently evaluating the impact that the adoption of this ASU will have on the consolidated financial statements. If the Company would have applied the provisions of this ASU for the year ended December 31, 2016, operating income would have decreased by \$3.5 million.

In May 2017, the FASB issued ASU 2017-09, *Stock Compensation - Scope of Modification Accounting*, which amends the scope of modification accounting for share-based payment arrangements. This ASU provides guidance on the types of changes to the terms or conditions of share-based payment awards to which an entity would be required to apply modification accounting. Specifically, an entity would not apply modification accounting if the fair value, vesting conditions, and classification of the awards are the same immediately before and after the modification. This ASU is effective for periods beginning after December 31, 2017. The Company plans to adopt the ASU on January 1, 2018 and is currently evaluating the impact that the adoption of this ASU will have on the consolidated financial statements.

Note 3—Inventories

The following table sets forth the components of inventory:

| (In thousands) | September 30, 2017 | December 31, 2016 |
|-----------------------------|--------------------|-------------------|
| Finished products | \$ 70,446 | \$ 54,348 |
| Work in process | 12,076 | 6,542 |
| Raw materials and supplies | 119,651 | 84,069 |
| Inventories at current cost | 202,173 | 144,959 |
| Less: LIFO valuation | (41,893) | (41,893) |
| Total inventories | \$ 160,280 | \$ 103,066 |

Note 4—Restructuring Charges

During the three and nine months ended September 30, 2017, we recorded restructuring charges, net of adjustments, of \$3.2 million and \$16.9 million, respectively. Americas segment restructuring charges of \$12.5 million during the nine months ended September 30, 2017 related primarily to the voluntary retirement incentive package described below as well as severance from staff reductions in Brazil. International segment restructuring charges of \$4.4 million during the nine months ended September 30, 2017 were related to severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth in Europe and right size our operations in Australia and Africa.

In September 2016, certain employees in the Americas segment were offered a voluntary retirement incentive package (“VRIP”). The election window for participation closed on October 17, 2016. The employees were required to render service through January 31, 2017 to receive the VRIP and had until February 6, 2017 to revoke their election. None of the 83 employees who accepted the VRIP revoked their election to retire under the terms of the plan. Non-cash special termination benefit expense of \$11.4 million was incurred in the first quarter of 2017 related to these elections. All benefits were paid from our over funded North America pension plan.

During the three and nine months ended September 30, 2016, we recorded restructuring charges, net of adjustments of \$1.9 million and \$3.7 million. International segment charges of \$3.4 million during the nine months ended September 30, 2016 were related to severance costs for staff reductions associated with ongoing initiatives to right size our operations in Europe and Asia. Americas segment restructuring charges of \$1.2 million during the nine months ended September 30, 2016 related primarily to severance from staff reductions in Latin America. Favorable adjustments for changes in estimates on employee restructuring reserves of \$1.1 million were made during the nine months ended September 30, 2016.

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

| (in millions) | Americas | International | Corporate | Total |
|--|----------|---------------|-----------|--------|
| Reserve balances at December 31, 2015 | \$ 1.6 | \$ 5.4 | \$ 1.1 | \$ 8.1 |
| Restructuring charges | 1.8 | 5.3 | 0.2 | 7.3 |
| Adjustments to estimates on restructuring reserves | (0.5) | (0.6) | (0.5) | (1.6) |
| Cash payments | (2.0) | (7.3) | (0.5) | (9.8) |
| Reserve balances at December 31, 2016 | \$ 0.9 | \$ 2.8 | \$ 0.3 | \$ 4.0 |
| Restructuring charges | 12.5 | 4.5 | — | 17.0 |
| Adjustments to estimates on restructuring reserves | — | (0.1) | — | (0.1) |
| Cash payments/utilization | (12.9) | (2.5) | (0.3) | (15.7) |
| Reserve balances at September 30, 2017 | \$ 0.5 | \$ 4.7 | \$ — | \$ 5.2 |

Note 5—Property, Plant and Equipment

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

| (In thousands) | September 30, 2017 | December 31, 2016 |
|-----------------------------------|--------------------|-------------------|
| Land | \$ 3,299 | \$ 2,684 |
| Buildings | 119,657 | 111,762 |
| Machinery and equipment | 383,642 | 361,010 |
| Construction in progress | 9,907 | 10,714 |
| Total | 516,505 | 486,170 |
| Less: accumulated depreciation | (364,030) | (337,492) |
| Net property, plant and equipment | \$ 152,475 | \$ 148,678 |

Note 6—Reclassifications Out of Accumulated Other Comprehensive Loss

The changes in Accumulated Other Comprehensive Loss were as follows:

| (In thousands) | MSA Safety Incorporated | | Noncontrolling Interests | |
|---|----------------------------------|--------------|----------------------------------|------------|
| | Three Months Ended September 30, | | Three Months Ended September 30, | |
| | 2017 | 2016 | 2017 | 2016 |
| Pension and other post-retirement benefits ^(a) | | | | |
| Balance at beginning of period | \$ (113,927) | \$ (115,603) | \$ — | \$ — |
| Amounts reclassified from Accumulated other comprehensive loss: | | | | |
| Amortization of prior service cost | (10) | (88) | — | — |
| Recognized net actuarial losses | 3,199 | 3,027 | — | — |
| Tax benefit | (1,009) | (1,046) | — | — |
| Total amount reclassified from Accumulated other comprehensive loss, net of tax | 2,180 | 1,893 | — | — |
| Balance at end of period | \$ (111,747) | \$ (113,710) | \$ — | \$ — |
| Foreign Currency Translation | | | | |
| Balance at beginning of period | \$ (85,848) | \$ (86,873) | \$ (3,427) | \$ (2,536) |
| Foreign currency translation adjustments | 5,892 | (2,596) | 4,129 | 185 |
| Balance at end of period | \$ (79,956) | \$ (89,469) | \$ 702 | \$ (2,351) |

| (In thousands) | MSA Safety Incorporated | | Noncontrolling Interests | |
|---|---------------------------------|--------------|---------------------------------|------------|
| | Nine Months Ended September 30, | | Nine Months Ended September 30, | |
| | 2017 | 2016 | 2017 | 2016 |
| Pension and other post-retirement benefits ^(a) | | | | |
| Balance at beginning of period | \$ (118,068) | \$ (119,389) | \$ — | \$ — |
| Amounts reclassified from Accumulated other comprehensive loss: | | | | |
| Amortization of prior service cost | (228) | (268) | — | — |
| Recognized net actuarial losses | 9,601 | 9,079 | — | — |
| Tax benefit | (3,052) | (3,132) | — | — |
| Total amount reclassified from Accumulated other comprehensive loss, net of tax | 6,321 | 5,679 | — | — |
| Balance at end of period | \$ (111,747) | \$ (113,710) | \$ — | \$ — |
| Foreign Currency Translation | | | | |
| Balance at beginning of period | \$ (112,178) | \$ (88,810) | \$ (1,964) | \$ (3,616) |
| Reclassification into earnings | — | 3,355 | — | 770 |
| Foreign currency translation adjustments | 32,222 | (4,014) | 2,666 | 495 |
| Balance at end of period | \$ (79,956) | \$ (89,469) | \$ 702 | \$ (2,351) |

^(a) The 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 (see Note 15—Pensions and Other Post-Retirement Benefits).

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 September 30, 2017. There were no treasury purchases of preferred stock during the nine months ended September 30, 2017 or 2016. 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 September 30, 2017.

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, 2016. No new shares have been issued in 2017. There were 38,025,521 and 37,736,578 shares outstanding at September 30, 2017 and December 31, 2016, respectively.

Treasury Shares - In 2015, the Board of Directors adopted a stock repurchase program. The 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 shares that may be purchased is calculated based on the dollars remaining under the program and the respective month-end closing share price. There were 168,941 shares repurchased during nine months ended September 30, 2017. No shares were repurchased during the nine months ended September 30, 2016. We do not have any other share purchase programs. There were 24,055,870 and 24,344,813 Treasury Shares at September 30, 2017 and December 31, 2016, 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 526,890 Treasury Shares issued for these purposes during the nine months ended September 30, 2017.

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 and International segments were established on January 1, 2016. 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) and adjusted operating 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 from continuing operations excluding restructuring charges, currency exchange gains (losses) and other operating expense. Adjusted operating margin is defined as adjusted operating income (loss) divided by segment sales to external customers. Adjusted operating income (loss) and adjusted operating margin are not recognized terms under GAAP and therefore do not purport to be alternatives to operating income or operating margin from continuing operations as a measure of operating performance. Further, the Company's measure of adjusted operating income (loss) and adjusted operating margin may not be comparable to similarly titled measures of other companies. Adjusted operating income (loss) on a consolidated basis is presented in the following table to reconcile the segment operating performance measure to operating income as presented on the 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) | Americas | International | Corporate | Reconciling Items ¹ | Consolidated Totals |
|--|--------------|---------------|-----------|-----------------------------------|------------------------|
| Three Months Ended September 30, 2017 | | | | | |
| Sales to external customers | \$ 186,898 | \$ 109,231 | \$ — | \$ — | \$ 296,129 |
| Intercompany sales | 31,451 | 72,496 | — | (103,947) | — |
| Operating income | | | | | 40,617 |
| Restructuring and other charges | | | | | 3,214 |
| Currency exchange losses, net | | | | | 562 |
| Other operating expense (Note 18) | | | | | 3,346 |
| Adjusted operating income (loss) | 47,256 | 9,077 | (8,594) | — | 47,739 |
| Adjusted operating margin % | 25.3% | 8.3% | | | |
| Total Assets | \$ 1,037,690 | \$ 542,542 | \$ 10,862 | \$ 4,123 | \$ 1,595,217 |
| Nine Months Ended September 30, 2017 | | | | | |
| Sales to external customers | \$ 528,426 | \$ 322,243 | \$ — | \$ — | \$ 850,669 |
| Intercompany sales | 93,904 | 218,267 | — | (312,171) | — |
| Operating income | | | | | 74,341 |
| Restructuring and other charges | | | | | 16,920 |
| Currency exchange losses, net | | | | | 3,994 |
| Other operating expense (Note 18) | | | | | 32,956 |
| Adjusted operating income (loss) | 130,887 | 26,691 | (29,367) | — | 128,211 |
| Adjusted operating margin % | 24.8% | 8.3% | | | |
| Total Assets | \$ 1,037,690 | \$ 542,542 | \$ 10,862 | \$ 4,123 | \$ 1,595,217 |
| Three Months Ended September 30, 2016 | | | | | |
| Sales to external customers | \$ 165,359 | \$ 112,874 | \$ — | \$ — | \$ 278,233 |
| Intercompany sales | 28,324 | 65,098 | — | (93,422) | — |
| Operating income | | | | | 40,022 |
| Restructuring and other charges | | | | | 1,889 |
| Currency exchange losses, net | | | | | 790 |
| Other operating expense (Note 18) | | | | | — |
| Adjusted operating income (loss) | 41,458 | 10,511 | (9,268) | — | 42,701 |
| Adjusted operating margin % | 25.1% | 9.3% | | | |
| Total Assets | \$ 885,416 | \$ 533,868 | \$ 3,829 | \$ 4,833 | \$ 1,427,946 |
| Nine Months Ended September 30, 2016 | | | | | |
| Sales to external customers | \$ 510,324 | \$ 343,175 | \$ — | \$ — | \$ 853,499 |
| Intercompany sales | 86,194 | 195,435 | — | (281,629) | — |
| Operating income | | | | | 116,648 |
| Restructuring and other charges | | | | | 3,697 |
| Currency exchange losses, net | | | | | 2,498 |
| Other operating expense (Note 18) | | | | | — |
| Adjusted operating income (loss) | 117,475 | 31,659 | (26,291) | — | 122,843 |
| Adjusted operating margin % | 23.0% | 9.2% | | | |
| Total Assets | \$ 885,416 | \$ 533,868 | \$ 3,829 | \$ 4,833 | \$ 1,427,946 |

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

The percentage of total sales by product group were as follows:

| Three Months Ended September 30, | 2017 | 2016 |
|--|-------------|-------------|
| Breathing Apparatus | 22% | 24% |
| Fixed Gas & Flame Detection | 21% | 22% |
| Portable Gas Detection | 12% | 13% |
| Industrial Head Protection | 12% | 11% |
| Fall Protection | 8% | 9% |
| Firefighter Helmets & Protective Apparel | 11% | 4% |
| Other | 14% | 17% |

| Nine Months Ended September 30, | 2017 | 2016 |
|--|-------------|-------------|
| Breathing Apparatus | 24% | 26% |
| Fixed Gas & Flame Detection | 20% | 20% |
| Portable Gas Detection | 13% | 13% |
| Industrial Head Protection | 12% | 10% |
| Fall Protection | 8% | 9% |
| Firefighter Helmets & Protective Apparel | 7% | 5% |
| Other | 16% | 17% |

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: (In thousands, except per share amounts) | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|--|-------------------------------------|------------|------------------------------------|-----------|
| | 2017 | 2016 | 2017 | 2016 |
| Net income from continuing operations | \$ 32,066 | \$ 25,486 | \$ 59,011 | \$ 67,475 |
| Preferred stock dividends | (10) | (11) | (30) | (29) |
| Income from continuing operations available to common equity | 32,056 | 25,475 | 58,981 | 67,446 |
| Dividends and undistributed earnings allocated to participating securities | (36) | (38) | (62) | (105) |
| Income from continuing operations available to common shareholders | 32,020 | 25,437 | 58,919 | 67,341 |
| Net loss from discontinued operations | \$ — | \$ (1,300) | \$ — | \$ (455) |
| Preferred stock dividends | — | 1 | — | (1) |
| Loss from discontinued operations available to common equity | — | (1,299) | — | (456) |
| Dividends and undistributed earnings allocated to participating securities | — | 2 | — | 1 |
| Loss from discontinued operations available to common shareholders | — | (1,297) | — | (455) |
| Basic weighted-average shares outstanding | 38,074 | 37,487 | 37,970 | 37,407 |
| Stock options and other stock compensation | 628 | 625 | 722 | 501 |
| Diluted weighted-average shares outstanding | 38,702 | 38,112 | 38,692 | 37,908 |
| Antidilutive stock options | — | — | — | — |
| Earnings per share attributable to continuing operations: | | | | |
| Basic | \$ 0.84 | \$ 0.68 | \$ 1.55 | \$ 1.80 |
| Diluted | \$ 0.83 | \$ 0.67 | \$ 1.52 | \$ 1.77 |
| Loss per share attributable to discontinued operations: | | | | |
| Basic | \$ — | \$ (0.04) | \$ — | \$ (0.01) |
| Diluted | \$ — | \$ (0.04) | \$ — | \$ (0.01) |

Note 10—Income Taxes

The Company's effective tax rate for the third quarter of 2017 was 14.4% and differs from the U.S. federal statutory rate of 35% primarily due to a 6.6% benefit associated with the reduction of exit taxes related to our European reorganization, additional manufacturing deduction benefits and the release of valuation allowance on foreign losses. The Company's effective tax rate for the third quarter of 2016 of 30.1% differs from the U.S. federal statutory rate of 35% primarily due to profitability in more favorable tax jurisdictions and benefits associated with U.S. tax credits for research and development and the manufacturing deduction.

The Company's effective tax rate for the nine months ended September 30, 2017 was 9.6% and differs from the U.S. federal statutory rate of 35% primarily due to a significant tax benefit of approximately 10.5% related to certain share-based payments related to the adoption of ASU 2016-09 as well as a 3.8% benefit associated with the reduction of exit taxes related to our European reorganization, additional manufacturing deduction benefits and the release of a valuation allowance on foreign losses. The effective tax rate for the nine months ended September 30, 2016 was 36.0%, inclusive of 3.3% associated with exit taxes related to our European reorganization. The 36.0% rate for the nine month period of 2016 differs from the U.S. federal statutory rate of 35% primarily due to the exit taxes discussed above, partially offset by profitability in more favorable tax jurisdictions and benefits associated with U.S. tax credits for research and development and the manufacturing deduction.

At September 30, 2017, the Company had a gross liability for unrecognized tax benefits of \$15.4 million. The Company has recognized tax benefits associated with these liabilities of \$6.8 million at September 30, 2017. 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 September 30, 2017.

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. 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, restricted stock grants, restricted stock unit grants, and performance stock unit grants. Please refer to Note 7 for further information regarding stock compensation share issuance.

Stock compensation expense is as follows:

| (In thousands) | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|----------------------------------|----------|---------------------------------|----------|
| | 2017 | 2016 | 2017 | 2016 |
| Stock compensation expense | \$ 1,435 | \$ 1,341 | \$ 9,668 | \$ 8,292 |
| Income tax benefit | 543 | 515 | 3,650 | 3,210 |
| Stock compensation expense, net of income tax benefit | \$ 892 | \$ 826 | \$ 6,018 | \$ 5,082 |

A summary of stock option activity for the nine months ended September 30, 2017 follows:

| | Shares | Weighted Average Exercise Price |
|-----------------------------------|-----------|---------------------------------|
| Outstanding at January 1, 2017 | 1,576,092 | \$ 37.63 |
| Exercised | (422,711) | 29.32 |
| Outstanding at September 30, 2017 | 1,153,381 | 40.68 |
| Exercisable at September 30, 2017 | 785,377 | \$ 38.11 |

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 nine months ended September 30, 2017 follows:

| | Shares | Weighted Average Grant Date Fair Value |
|--------------------------------|----------|--|
| Unvested at January 1, 2017 | 234,592 | \$ 49.76 |
| Granted | 65,683 | 74.90 |
| Vested | (72,128) | 51.35 |
| Forfeited | (3,174) | 50.11 |
| Unvested at September 30, 2017 | 224,973 | \$ 57.16 |

Performance stock units have a market condition modifier and are valued on the grant date using a Monte Carlo valuation model to determine fair value. The final number of shares to be issued for performance stock units granted in the first quarter of 2017 may range from 0% to 200% of the target award based on achieving the specified performance targets over the performance period. The following weighted average assumptions were used in the Monte Carlo model for units granted in the first quarter of 2017 with a market condition modifier.

| | |
|-------------------------|---------|
| Fair value per unit | \$72.28 |
| Risk-free interest rate | 1.45% |
| Expected dividend yield | 2.31% |
| Expected volatility | 29.1% |
| MSA stock beta | 1.272 |

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 historical volatility using daily stock prices. Stock beta is calculated with three years of daily price data.

A summary of performance stock unit activity for the nine months ended September 30, 2017 follows:

| | Shares | Weighted Average Grant Date Fair Value |
|--------------------------------|----------|---|
| Unvested at January 1, 2017 | 186,621 | \$ 46.18 |
| Granted | 98,886 | 72.73 |
| Performance adjustments | 27,915 | 57.26 |
| Vested | (71,403) | 56.47 |
| Unvested at September 30, 2017 | 242,019 | \$ 55.06 |

The performance adjustments above relate to the final number of shares issued for the 2014 Management Performance Units, which were 189.2% of the target award based on Total Shareholder Return during the three year performance period, and vested in the first quarter of 2017.

Note 12—Long-Term Debt

| (In thousands) | September 30, 2017 | December 31, 2016 |
|---|--------------------|-------------------|
| 2006 Senior Notes payable through 2021, 5.41%, net of debt issuance costs | \$ 33,333 | \$ 33,333 |
| 2010 Senior Notes payable through 2021, 4.00%, net of debt issuance costs | 100,000 | 100,000 |
| 2016 Senior Notes payable through 2031, 3.40%, net of debt issuance costs | 73,511 | 67,713 |
| Senior revolving credit facility maturing in 2020, net of debt issuance costs | 265,540 | 189,456 |
| Total | 472,384 | 390,502 |
| Amounts due within one year, net of debt issuance costs | 26,667 | 26,666 |
| Long-term debt, net of debt issuance costs | \$ 445,717 | \$ 363,836 |

Under the 2015 Amended and Restated Credit Agreement associated with our senior revolving credit facility, 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) the Prime Rate, (ii) the Federal Funds Open Rate plus one half of one percent (0.5%) or (iii) 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 interest rate of 2.22% on the senior revolving credit facility as of September 30, 2017. At September 30, 2017, \$301.6 million of the existing \$575.0 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, pursuant to which MSA issued notes in an aggregate original principal amount of £54.9 million (approximately \$73.6 million at September 30, 2017). The notes are repayable in annual installments of £6.1 million (approximately \$8.2 million at September 30, 2017), 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%. The note purchase agreement requires 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 3.25 to 1.00; in each case calculated on the basis of the trailing four fiscal quarters. In addition, the note purchase agreement contains 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.

The revolving credit facilities and note purchase agreements require the Company to comply with specified financial covenants. In addition, the credit facilities and the note purchase agreements 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 September 30, 2017.

The Company had outstanding bank guarantees and standby letters of credit with banks as of September 30, 2017 totaling \$13.2 million, of which \$6.6 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. No amounts were drawn on these arrangements at September 30, 2017. The Company is also required to provide cash collateral in connection with certain arrangements. At September 30, 2017, the Company has \$0.8 million of restricted cash in support of these arrangements.

Note 13—Goodwill and Intangible Assets

Changes in goodwill during the nine months ended September 30, 2017 are as follows:

| (In thousands) | Goodwill |
|-------------------------------|------------|
| Balance at January 1, 2017 | \$ 333,276 |
| Additions (Note 14) | 71,721 |
| Currency translation | 12,952 |
| Balance at September 30, 2017 | \$ 417,949 |

At September 30, 2017, the Company had goodwill of \$270.5 million and \$147.4 million related to the Americas and International reportable segments, respectively.

Changes in intangible assets, net of accumulated amortization during the nine months ended September 30, 2017 are as follows:

| (In thousands) | Intangible Assets |
|-----------------------------------|-------------------|
| Net balance at January 1, 2017 | \$ 77,015 |
| Additions (Note 14) | 110,680 |
| Amortization expense | (6,682) |
| Currency translation | 4,343 |
| Net balance at September 30, 2017 | \$ 185,356 |

Note 14—Acquisitions

Acquisition of Globe Holding Company, LLC

On July 31, 2017, we acquired 100% of the common stock in Globe Holding Company, LLC ("Globe") in an all-cash transaction valued at \$215 million minus a working capital adjustment of \$1.0 million. There is no contingent consideration.

Based in Pittsfield, NH, Globe is a leading innovator and provider of firefighter protective clothing and boots. This acquisition aligns with our corporate strategy in that it strengthens our leading position in the North American fire service market. The transaction was funded through borrowings on our unsecured senior revolving credit facility.

Globe operating results are included in our 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 preliminary fair values of the Globe assets acquired and liabilities assumed at the date of acquisition:

| (In millions) | July 31, 2017 | |
|---|----------------------|--------------|
| Current assets (including cash of \$58 thousand) | \$ | 28.6 |
| Property, plant and equipment and other noncurrent assets | | 8.7 |
| Trade name | | 60.0 |
| Distributor relationships | | 40.2 |
| Acquired technology and other intangible assets | | 10.5 |
| Goodwill | | 71.7 |
| Total assets acquired | | 219.7 |
| Total liabilities assumed | | 5.7 |
| Net assets acquired | \$ | 214.0 |

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-2018.

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 trade name and technology related intangible assets; the excess earnings approach for distributor relationships using distributor 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 Globe 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 distributor relationships acquired in the Globe transaction will be amortized over a period of 20 years and the remaining identifiable assets will be amortized over 5 years. The trade name was determined to have an indefinite useful life. We will perform an impairment assessment annually on the trade name, or sooner if there is a triggering event. Additionally, as part of each impairment assessment, we will reassess whether the asset continues to have an indefinite life or whether it should be reassessed with a finite life. Estimated future amortization expense related to the identifiable intangible assets is approximately \$1.7 million for the remainder of 2017 and \$4.1 million in each of the next four years 2018 through 2021 and \$3.2 million in 2022. Estimated future depreciation expense related to Globe property, plant and equipment is approximately \$0.3 million for the remainder of 2017 and \$1.0 million in each of the next five years.

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 Globe with our operations. Goodwill of \$71.7 million related to the Globe acquisition has been recorded in the Americas reportable segment and is deductible for tax purposes.

Acquisition of Senscient, Inc.

On September 19, 2016, we acquired 100% of the common stock of Senscient, Inc. ("Senscient") for \$19.1 million in cash. There is no contingent consideration. Senscient, which is headquartered in the UK, is a leader in laser-based open path gas detection technology. The acquisition of Senscient expands and enhances MSA's technology offerings in the global market for fixed gas and flame detection systems, as the Company continues to execute its core product growth strategy. The acquisition was funded through borrowings on our unsecured senior revolving credit facility.

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

| (In millions) | September 19, 2016 |
|---|---------------------------|
| Current assets (including cash of \$0.7 million) | \$ 5.9 |
| Property, plant and equipment and other noncurrent assets | 0.3 |
| Acquired technology | 1.6 |
| Customer-related intangibles | 2.8 |
| Goodwill | 10.5 |
| Total assets acquired | 21.1 |
| Total liabilities assumed | 2.0 |
| Net assets acquired | \$ 19.1 |

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 the technology related intangible assets 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, costs to produce, tax rates, capital spending, discount rates, and working capital changes. Cash flow forecasts were generally based on pre-acquisition forecasts coupled with estimated MSA sales synergies. Identifiable intangible assets with finite lives are subject to amortization over their estimated useful lives, which are ten and five years for the technology and customer-related intangibles, respectively. Estimated future amortization expense related to identifiable intangible assets is approximately \$0.3 million for the remaining portion of 2017 and \$0.7 million each year from 2018 through 2021.

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 Senscient with our operations. Goodwill of \$10.5 million related to the Senscient acquisition is included in the International operating segment and is deductible for tax purposes.

Our results for the nine months ended September 30, 2017, include transaction and integration costs of \$0.4 million related to the Senscient acquisition and \$1.0 million related to the acquisition of Globe Holding Company LLC. These costs are reported in selling, general and administrative expenses.

The operating results of both acquisitions have been included in our consolidated financial statements from the acquisition date through September 30, 2017. Our results for the nine months ended September 30, 2017 include Globe sales and net income of \$19.7 million and \$1.7 million, respectively. Excluding transaction and integration costs, Globe provided \$2.4 million of net income for the nine months ended September 30, 2017.

The following unaudited pro forma information presents our combined results as if both acquisitions had occurred at the beginning of 2016. 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 either Senscient or Globe during the periods presented that are required to be eliminated. Intercompany transactions between Senscient companies as well as the Globe 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 acquisitions 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 | | Nine months ended | |
|---|-----------------------|-----------------------|-----------------------|--------------------|
| | September 30, 2017 | September 30, 2016 | September 30, 2017 | September 30, 2016 |
| (In millions, except per share amounts) | | | | |
| Net sales | \$ 304.6 | \$ 305.5 | \$ 915.1 | \$ 940.0 |
| Income from continuing operations | 30.8 | 29.9 | 68.4 | 81.7 |
| Basic earnings per share from continuing operations | 0.81 | 0.80 | 1.80 | 2.18 |
| Diluted earnings per share from continuing operations | 0.80 | 0.78 | 1.77 | 2.15 |

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 acquisitions been completed as of the date and for the period presented, and should not be taken as representative of our consolidated results of operations or financial condition following the acquisitions. 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 GAAP. MSA has been treated as the acquirer.

Note 15—Pensions and Other Post-retirement Benefits

Components of net periodic benefit cost consisted of the following:

| (In thousands) | Pension Benefits | | Other Benefits | |
|--|-----------------------|----------|----------------|--------|
| | 2017 | 2016 | 2017 | 2016 |
| Three Months Ended September 30, | | | | |
| Service cost | \$ 2,721 | \$ 2,634 | \$ 96 | \$ 106 |
| Interest cost | 4,572 | 4,702 | 204 | 237 |
| Expected return on plan assets | (8,738) | (8,682) | — | — |
| Amortization of prior service cost | (4) | 17 | (6) | (105) |
| Recognized net actuarial losses | 3,184 | 3,010 | 15 | 17 |
| Settlements | 34 | 17 | — | — |
| Net periodic benefit cost | 1,769 | 1,698 | 309 | 255 |
| Nine Months Ended September 30, | | | | |
| Service cost | \$ 8,163 | \$ 7,902 | \$ 308 | \$ 318 |
| Interest cost | 13,716 | 14,106 | 678 | 711 |
| Expected return on plan assets | (26,214) | (26,046) | — | — |
| Amortization of prior service cost | (12) | 47 | (216) | (315) |
| Recognized net actuarial losses | 9,552 | 9,028 | 49 | 51 |
| Settlements | 102 | 57 | — | — |
| Net periodic benefit cost, excluding below | 5,307 | 5,094 | 819 | 765 |
| Special termination charge | 11,384 ^(a) | — | — | — |
| Net periodic benefit cost | 16,691 | 5,094 | 819 | 765 |

^(a) Represents the charge for special termination benefits related to the VRIP which were paid from our over funded North America pension plan and recorded as restructuring charges on the condensed consolidated statement of income. See further details in Note 4.

We made contributions of \$4.4 million and \$4.7 million to our pension plans during the nine months ended September 30, 2017 and 2016, respectively. We expect to make total contributions of approximately \$5.9 million to our pension plans in 2017 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 gains or losses in the condensed consolidated statement of income. The notional amount of open forward contracts was \$77.1 million and \$75.3 million at September 30, 2017 and December 31, 2016, respectively.

The following table presents the condensed consolidated balance sheet location and fair value of assets associated with derivative financial instruments:

| (In thousands) | September 30, 2017 | December 31, 2016 |
|---|--------------------|-------------------|
| Derivatives not designated as hedging instruments: | | |
| Foreign exchange contracts: other current liabilities | \$ 887 | \$ 258 |
| Foreign exchange contracts: other current assets | 43 | 566 |

The following table presents the condensed consolidated statement of income location and impact of derivative financial instruments:

| (In thousands) | Statement of Income Location | (Gain) Loss Recognized in Income | |
|--|----------------------------------|----------------------------------|----------|
| | | Nine Months Ended September 30, | |
| | | 2017 | 2016 |
| Derivatives not designated as hedging instruments: | | | |
| Foreign exchange contracts | Currency exchange (gains) losses | \$ (5,780) | \$ 2,158 |

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 were limited to the derivative financial instruments described in Note 16. 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.

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 \$207.0 million and \$211.3 million at September 30, 2017 and 2016, respectively. The fair value of this debt was \$226.1 million and \$236.8 million at September 30, 2017 and 2016, respectively. The fair value of this debt was determined using Level 2 inputs by evaluating like 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

The Company categorizes the product liability claims of its subsidiary MSA LLC into two main categories: single incident and cumulative trauma.

Single incident claims. Single incident product liability claims involve incidents of short duration that are typically known to us when they occur and involve observable injuries, which provide an objective basis for quantifying damages. MSA LLC works with an outside valuation consultant to review its single incident product liability exposure on an annual basis, or more frequently if changing circumstances or developments in existing cases make an interim review appropriate. The review process takes into account the number and composition of asserted claims, expected settlement costs for reported claims, and an estimate of costs for unreported claims (claims incurred but not reported or "IBNR"). The estimate for IBNR claims is based on experience, sales volumes, and other relevant information. Adjustments are made to the reserve as appropriate. The reserve for single incident product liability claims, which includes reported and IBNR claims, was \$3.7 million at September 30, 2017 and \$3.4 million at December 31, 2016. Single incident product liability expense was \$0.3 million during the nine months ended September 30, 2017 and \$0.5 million during the nine months ended September 30, 2016.

Cumulative trauma claims. Cumulative trauma product liability claims involve exposures to harmful substances (e.g., silica, asbestos and coal dust) that occurred many years ago and may have developed over long periods of time into diseases such as silicosis, asbestosis, mesothelioma, or coal worker’s pneumoconiosis. There are two types of cumulative trauma claims, asserted and IBNR claims. MSA LLC is presently named as a defendant in 1,435 lawsuits comprised of 2,271 asserted claims. 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. Although there is year over year variability in the number and quality of asserted claims defended and resolved, MSA LLC’s aggregate spend for cumulative trauma product liability asserted claims (inclusive of settlements and defense costs) for the three years ended December 31, 2016, totaled approximately \$150.9 million, substantially all of which was recorded as insurance receivables or notes receivable from insurance companies because the amounts are believed to be recoverable under insurance.

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

| | Nine Months Ended September 30, 2017 | Year Ended December 31, 2016 |
|--------------------------------------|---|---------------------------------|
| Open lawsuits, beginning of period | 1,794 | 1,988 |
| New lawsuits | 304 | 379 |
| Settled and dismissed lawsuits | (663) | (573) |
| Open lawsuits, end of period | 1,435 | 1,794 |
| | Nine Months Ended September 30, 2017 | Year Ended December 31, 2016 |
| Asserted claims, beginning of period | 3,023 | 3,779 |
| New claims | 349 | 843 |
| Settled and dismissed claims | (1,101) | (1,599) |
| Asserted claims, end of period | 2,271 | 3,023 |

More than half of the open lawsuits at September 30, 2017 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 point due to changes in circumstances. In August 2017 prior to filing our second quarter Form 10-Q, MSA LLC agreed to resolve a substantial number of cumulative trauma claims as discussed below.

Cumulative trauma product liability litigation is inherently unpredictable and our expense with respect to cumulative trauma claims, despite having settled a large number of our asserted claims, could vary significantly in future periods. Factors that can limit our ability to estimate potential liability include the lack of claims experience with applicable plaintiffs’ counsel, as claims experience can vary significantly among different counsel, low volume of resolution, lack of confidence with the consistency of claims composition, or other factors. With respect to the risk associated with any particular case, it has typically not been until very late in the legal process that it can be reasonably determined whether it is probable that any such case will ultimately result in a liability. This uncertainty has been caused by many factors, including consideration of the applicable statute of limitations, the sufficiency of product identification and other defenses. Complaints 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 plaintiffs’ counsel 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 in claims, uncertainties surrounding the litigation process from jurisdiction to jurisdiction and case to case.

Management works with outside legal counsel quarterly to review its cumulative trauma product liability known claim exposure. Similarly, management works with an outside valuation consultant and outside legal counsel to review its cumulative trauma product liability IBNR exposure on an annual basis, or more frequently if changing circumstances or developments in existing cases make an interim review appropriate. The review process takes into account the number and composition of asserted claims, outcomes of matters resolved during current and prior periods, and variances associated with different groups of claims and venues, as well as any other relevant information.

In August 2017, we obtained more information about a significant number of asserted claims, including the nature and extent of the alleged injuries, product identification and other factors. We subsequently agreed to resolve a substantial number of these cumulative trauma claims for \$75.2 million, a portion of which were insured, including the Couch claim which has been disclosed in our previous Form 10-Q and 10-K filings. Amounts in excess of our estimated insurance recoveries were reflected within Other operating expense in the Condensed Consolidated Statement of Income and did not have a material cash impact on the second quarter. MSA LLC paid \$3.2 million related to these settlements during the third quarter and will pay \$22.0 million in the fourth quarter of 2017. The balance is expected to be paid ratably over 7 quarters beginning in the first quarter of 2018 and ending in the third quarter of 2019. As a result of these developments, MSA LLC's cumulative trauma product liability reserve covers all asserted cumulative trauma product liability claims and we are now largely self-insured for cumulative trauma claims.

The total cumulative trauma product liability reserve was \$91.6 million and \$11.1 million at September 30, 2017 and December 31, 2016, respectively. At September 30, 2017, \$63.0 million of the cumulative trauma product liability reserve is recorded in the Insurance and product liability line within other current liabilities in the Condensed Consolidated Balance Sheet and the remainder, \$28.6 million, is recorded in the Other noncurrent liabilities line. All of the liability as of December 31, 2016 was recorded in the Insurance and product liability line within other current liabilities. To arrive at the estimated reserve, it was necessary to employ significant assumptions. The reserve does not include amounts which will be spent to defend the remaining claims covered by the reserve. These costs are recognized in the condensed consolidated statement of income as incurred.

The liability recorded does not take into account any cumulative trauma IBNR claims. Historically, we have worked with our outside valuation consultant and legal counsel and have concluded that we are unable to reasonably estimate the magnitude of potential losses relating to cumulative trauma IBNR claims due to lack of confidence in the consistency of claims composition and low volume of resolution. We are currently evaluating these potential claims based on our recent claims experience and will continue to work with our outside valuation consultant and legal counsel respecting such evaluation in the fourth quarter of 2017. If we are better able to estimate the magnitude of potential losses relating to cumulative trauma IBNR claims, we may increase our reserve to include all or a portion of the cumulative trauma IBNR claims.

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 with respect to claims included within the existing reserve that have not been settled or related to claims not included in the reserve. We will adjust the reserve for our liability relating to cumulative trauma claims from time to time based on the maturation of claims, developing facts and circumstances, and if actual experience differs from previous projections. These adjustments may reflect changes in estimates for claims currently included in the reserve, as well as estimated liabilities for claims incurred but not reported ("IBNR"). These adjustments may be material and could increase the year over year variability of our consolidated financial results or materially impact future periods in which a reserve is recorded.

Insurance Receivable and Notes Receivable, Insurance Companies

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, provide coverage for cumulative trauma product liability losses and, in many instances, related defense costs (the "Occurrence-Based Policies"). As of April 1986, MSA LLC's insurance policies have significant per claim retentions and applicable exclusions.

In the normal course of business, MSA LLC makes payments to settle product liability claims and for related defense costs and records receivables for the estimated amounts that are covered by insurance. Since we are now largely self-insured for cumulative trauma claims, additional amounts recorded as insurance receivables will be limited. Various factors could affect the timing and amount of recovery of the insurance receivable, including the outcome of negotiations with insurers and the outcome of the coverage litigation with respect to the Occurrence-Based Policies, and the extent to which the issuing insurers may become insolvent in the future. Insurance receivables are recorded at present value based on expected timing of receipts.

Insurance receivables at September 30, 2017 totaled \$108.7 million, of which, \$10.5 million is reported in Prepaid expenses and other current assets and \$98.2 million is reported in Insurance receivable and other noncurrent assets. Insurance receivables at December 31, 2016 totaled \$159.9 million, of which \$2.0 million was reported in Prepaid expenses and other current assets and \$157.9 million was reported in Insurance receivable and other noncurrent assets.

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

| (In millions) | Nine Months Ended September 30, 2017 | Year Ended December 31, 2016 |
|---|---|---------------------------------|
| Balance beginning of period | \$ 159.9 | \$ 229.5 |
| Additions | 68.4 | 29.2 |
| Collections and settlements converted to notes receivable | (119.6) | (98.8) |
| Balance end of period | \$ 108.7 | \$ 159.9 |

Additions to insurance receivables in the above table represent insured cumulative trauma product liability losses and related defense costs. Collections and settlements primarily represent agreements with insurance companies to pay amounts due that are applicable to cumulative trauma claims. When there are contingencies embedded in these agreements, we apply payments to the undiscounted receivable in the period when the contingency is met.

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

Notes receivable from insurance companies at September 30, 2017 totaled \$78.4 million, of which \$19.3 million is reported in Notes receivable, insurance companies, current and \$59.1 million is reported in Notes receivable, insurance companies, noncurrent. Notes receivable from insurance companies at December 31, 2016 totaled \$67.3 million, of which \$4.2 million was reported in Notes receivable, insurance companies, current and \$63.1 million was reported in Notes receivable, insurance companies, noncurrent.

A summary of notes receivable balances from insurance companies is as follows:

| (In millions) | Nine Months Ended September 30, 2017 | Year Ended December 31, 2016 |
|-----------------------------|---|---------------------------------|
| Balance beginning of period | \$ 67.3 | \$ 8.7 |
| Additions | 34.6 | 95.6 |
| Collections | (23.5) | (37.0) |
| Balance end of period | \$ 78.4 | \$ 67.3 |

The collectibility of MSA LLC's insurance receivables is regularly evaluated and we believe that the amounts recorded are probable of collection. These determinations are based on analysis of the terms of the underlying insurance policies, experience in successfully recovering cumulative trauma product liability claims from our insurers under other policies, the financial ability of the insurance carriers to pay the claims, understanding and interpretation of the relevant facts and applicable law and the advice of MSA LLC's outside legal counsel. We believe that successful resolution of insurance litigation with various insurance carriers over the years, as well as the recent trial verdict against North River, which resulted in a favorable outcome, demonstrate that we have strong legal positions concerning MSA LLC's rights to coverage. The trial verdict is described below.

Total cumulative trauma liability losses were \$101.4 million for the nine months ended September 30, 2017. Uninsured cumulative trauma product liability losses, which were included in Other operating expense on the condensed consolidated statement of income, were \$33.0 million for the nine months ended September 30, 2017.

Insurance Litigation

Through negotiated settlements, MSA LLC has reached resolution with the majority of its insurance carriers regarding its Occurrence-Based Policies and is currently involved in insurance coverage litigation with its three remaining insurance carriers, including The North River Insurance Company (North River). Assuming satisfactory resolution, once disputes are resolved with the three remaining carriers, as described below, including North River, MSA LLC anticipates having commitments to provide future payment streams which should be sufficient to satisfy its presently recorded insurance receivables due from insurance carriers.

Even if insurance coverage litigation is generally successful, the amount of our reserve exceeds our estimate of potential insurance coverage at September 30, 2017 and MSA LLC is largely self-insured for costs associated with the cumulative trauma product liability claims included in our reserve as well as future claims. MSA LLC expects to obtain some limited insurance reimbursement from negotiated coverage-in-place agreements (although that coverage may not be immediately triggered or accessible) or from other sources of coverage, but the precise amount of insurance reimbursement available at that time cannot be determined with specificity at this time.

North River

In 2009, MSA LLC (as Mine Safety Appliances Company) sued North River in the United States District Court for the Western District of Pennsylvania, alleging that North River breached one of its insurance policies by failing to pay amounts owed to MSA LLC and that it engaged in bad-faith claims handling. MSA LLC believes that North River's refusal to indemnify it under the policy for product liability losses and legal fees paid by MSA LLC is wholly contrary to Pennsylvania law and MSA LLC is vigorously pursuing the legal actions necessary to collect all due amounts. A trial date has not yet been scheduled.

In 2010, North River sued MSA LLC (as Mine Safety Appliances Company) in the Court of Common Pleas of Allegheny County, Pennsylvania seeking a declaratory judgment concerning their responsibilities under three additional policies. MSA LLC asserted claims against North River for breaches of contract for failures to pay amounts owed to MSA LLC. MSA LLC also alleged that North River engaged in bad-faith claims handling.

On October 6, 2016, a Pennsylvania state court jury found that North River breached the three contracts at issue in the case, and that North River also violated common law standards of bad faith in handling MSA LLC's claims. As a result of the jury's findings, the court entered a verdict in favor of MSA LLC and against North River for \$10.9 million, the full amount of the contractual damages at issue in the case. The \$10.9 million, which is comprised of previously recorded payments to settle product liability claims and related defense costs, is part of MSA LLC's insurance receivable. In addition to the claims decided by the jury, MSA LLC also presented a claim under Pennsylvania's bad faith statute, which is decided by the court. Following the jury verdict, the court also issued a verdict finding that North River had acted in bad faith. In December 2016 and January 2017, the Pennsylvania state court heard evidence regarding the extent of damages awardable as a result of the statutory bad faith claim. In an order dated February 9, 2017, the Court of Common Pleas of Allegheny County awarded MSA LLC an additional \$46.9 million in damages related to this statutory bad faith claim. The \$46.9 million award was comprised of \$30.0 million in punitive damages, \$11.8 million in attorneys' fees, and \$5.1 million in pre-judgment interest, each of which is authorized by a Pennsylvania statute covering bad faith claims handling matters. In August 2017, the court entered judgment on the verdicts. North River has filed a Notice of Appeal with the Pennsylvania Supreme Court.

In the first quarter of 2017, MSA LLC received payments of approximately \$80.9 million (the "Payment") pursuant to insurance policies issued by North River. The Payment reflects amounts previously invoiced to North River for reimbursement on cumulative trauma product liability claims and therefore was recorded as a reduction to the insurance receivable. North River has reserved its rights to recover from MSA LLC any portion of the Payment that may later be judicially determined is not owed MSA LLC under the relevant policies. The Payment does not constitute a full and final settlement from North River regarding its coverage obligations owed to MSA LLC. MSA LLC continues to seek additional amounts due from North River, including those amounts relating to the awards referenced in the paragraph above, which were not part of the Payment.

Delaware Matter

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. In the fourth quarter of 2017, motions will be decided on outstanding disputed legal issues.

During April 2017, MSA LLC resolved through negotiated settlements its coverage litigation with Travelers Insurance Company ("Travelers") and Wausau Indemnity Company ("Wausau"). Travelers and Wausau have agreed to make cash payments in 2018; those amounts were recorded as a transfer from the insurance receivable balance to the Notes receivable, insurance companies (current) in the second quarter of 2017. Travelers also has agreed to pay a percentage of future cumulative trauma product liability settlements as incurred on a claim-by-claim basis. As part of both settlements, MSA LLC dismissed all claims against Travelers and Wausau in the above-referenced coverage litigation in the Superior Court of the State of Delaware.

Note 19—Discontinued Operations

On February 29, 2016, the Company sold 100% of the stock associated with its South African personal protective equipment distribution business and its Zambian operations. The Company received \$15.9 million from the closing of this transaction and recorded a loss of approximately \$0.3 million during the first quarter of 2016.

During the second quarter of 2016, the Company corrected its gain calculation on the disposition of the South African personal protective equipment distribution business and its Zambian operations. This resulted in a gain of approximately \$2.5 million being recorded during the second quarter in discontinued operations that should have been recorded in the first quarter of 2016. The Company evaluated materiality in accordance with SEC Staff Accounting Bulletins Topics 1.M and 1.N and considered relevant qualitative and quantitative factors. The Company concluded that this modification was not material to the first quarter of 2016 or the trend in earnings over the affected periods. The modification had no effect on cash flows or debt covenant compliance.

The operations of this business qualify as a component of an entity under FASB ASC 205-20 "Presentation of Financial Statements - Discontinued Operations", and thus the operations have been reclassified as discontinued operations and prior periods have been reclassified to conform to this presentation.

Summarized financial information for discontinued operations is as follows:

| (In thousands) | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|--|----------------------------------|------------|---------------------------------|----------|
| | 2017 | 2016 | 2017 | 2016 |
| Discontinued Operations | | | | |
| Net sales | \$ — | \$ — | \$ — | \$ 5,261 |
| Cost and expenses: | | | | |
| Cost of products sold | — | — | — | 4,819 |
| Selling, general and administrative | — | — | — | 937 |
| Currency exchange losses, net | — | — | — | 18 |
| Other expense (income), net | — | 1,300 | — | (896) |
| (Loss) income from discontinued operations before income taxes | — | (1,300) | — | 383 |
| Provision for income taxes | — | — | — | 328 |
| (Loss) income from discontinued operations, net of tax | \$ — | \$ (1,300) | \$ — | \$ 55 |

Certain balance sheet items that are related to the Company's South African personal protective equipment distribution business and its Zambian operations are reported as discontinued operations. These items are reported in the following consolidated balance sheet lines:

| (In thousands) | September 30, 2017 | December 31, 2016 |
|---|--------------------|-------------------|
| Discontinued Operations assets and liabilities | | |
| Total assets | \$ — | \$ — |
| Accrued and other liabilities | — | 686 |
| Total liabilities | — | 686 |
| Net assets | \$ — | \$ (686) |

The following summary provides financial information for discontinued operations related to the net income attributable to noncontrolling interests:

| (In thousands) | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|--|----------------------------------|----------|---------------------------------|------------|
| | 2017 | 2016 | 2017 | 2016 |
| Net income attributable to noncontrolling interests | | | | |
| Income from continuing operations | \$ (160) | \$ (836) | \$ (519) | \$ (1,496) |
| Income from discontinued operations | — | — | — | (510) |
| Net income | \$ (160) | \$ (836) | \$ (519) | \$ (2,006) |

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 consolidated financial statements and other financial information included elsewhere in this 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 products that protect people and facility infrastructures. Our safety products typically integrate any combination of electronics, mechanical systems and advanced materials to protect users against hazardous or life threatening situations. Our comprehensive lines of safety products are used by workers around the world in a broad range of markets including the oil, gas, and petrochemical, fire service, construction, utilities, and mining industries, as well as the military. 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 July 31, 2017, we acquired 100% of the common stock of Globe Holding Company, LLC ("Globe") in an all-cash transaction valued at \$215 million. Based in Pittsfield, NH, Globe is a leading innovator and provider of firefighter protective clothing and boots. The transaction was funded through borrowings on our unsecured senior revolving credit facility. Refer to Note 14 to the Condensed Consolidated Financial Statements in Part I Item 1 of this Form 10-Q.

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 six geographical operating segments that are aggregated into three reportable geographic segments: Americas, International and Corporate. In 2016, 59% and 41% 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. We serve our markets across the Americas segment with sales and distribution functions in the U.S., Mexico, Brazil, and Canada.

International. Our International segment includes companies in Europe, 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, 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 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., United Kingdom, Ireland, Sweden and China or are purchased from third party vendors.

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, which have leading market positions and a competitive advantage. Core products include fixed gas and flame detection systems, breathing apparatus where SCBA is the principal product, portable gas detection instruments, industrial head protection products, firefighter helmets & protective apparel and fall protection devices. These products receive the highest levels of investment and resources as they typically realize a higher gross profit margin and provide higher levels of return on investment than non-core products. Core products comprised approximately 84% and 83% of sales for the nine months ended September 30, 2017 and 2016, respectively.

MSA maintains a portfolio of non-core products, which include both adjacent and peripheral offerings. Adjacent products reinforce and extend the core, 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 adjacent products include respirators, eye and face protection, thermal imaging cameras, and gas masks. Gas masks and ballistic helmet sales are the primary purchases from our military customers and were approximately \$26.3 million and \$42.0 million globally during the nine months ended September 30, 2017 and 2016, respectively. Peripheral products are primarily sold to the mining industry and reflect a small portion of consolidated sales.

A detailed listing of our significant product offerings in the aforementioned product groups above is included in the MSA's Annual Report on Form 10-K for the year ended December 31, 2016.

RESULTS OF OPERATIONS

Three Months Ended September 30, 2017 Compared to Three Months Ended September 30, 2016

Net Sales from continuing operations. Net sales for the three months ended September 30, 2017 were \$296.1 million, an increase of \$17.9 million, or 6%, compared to \$278.2 million for the three months ended September 30, 2016. Please refer to the Net Sales from Continuing Operations table for a reconciliation of the quarter over quarter sales change.

| Net Sales (In millions) | Three Months Ended September 30, | | Dollar (Decrease) | Percent (Decrease) |
|---|----------------------------------|----------------|----------------------|-----------------------|
| | 2017 | 2016 | | |
| Consolidated Continuing Operations | \$296.1 | \$278.2 | \$17.9 | 6.4% |
| Americas | 186.9 | 165.4 | 21.5 | 13.0% |
| International | 109.2 | 112.9 | (3.7) | (3.3)% |

| Net Sales from Continuing Operations (Percent Change) | Three Months Ended September 30, 2017 versus September 30, 2016 | | |
|--|---|---------------|------------------------------------|
| | Americas | International | Consolidated Continuing Operations |
| GAAP reported sales change | 13.0% | (3.3)% | 6.4% |
| Currency translation effects | 0.2% | 3.3% | 1.4% |
| Constant currency sales change | 12.8% | (6.6)% | 5.0% |
| Acquisitions | 12.1% | 0.5% | 7.5% |
| Organic constant currency change | 0.7% | (7.1)% | (2.5)% |

Note: Organic 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. Organic constant currency sales change is calculated by deducting the percentage impact from acquisitions and currency translation effects from the overall percentage change in net sales.

Net sales for the Americas segment were \$186.9 million in the third quarter of 2017, an increase of \$21.5 million, or 13%, compared to \$165.4 million in the third quarter of 2016. During the quarter, constant currency sales in the Americas segment increased 13% compared to the prior year period driven primarily by the acquisition of Globe on July 31, 2017 which increased sales by 12% in the third quarter. We also saw growth from industrial markets in head protection and fall protection sales during the quarter as compared to prior year.

Net sales for the International segment were \$109.2 million in the third quarter of 2017, a decrease of \$3.7 million, or 3%, compared to \$112.9 million for the third quarter of 2016. Constant currency sales in the International segment decreased 7% during the quarter, primarily due to a lower volume of sales in Europe, particularly for military helmets and fall protection, partially offset by a higher volume of FGFD sales in the Middle East and head protection across the segment. International segment backlog remains at a healthy level as we head into the fourth quarter.

Gross profit. Gross profit for the third quarter of 2017 was \$132.5 million, an increase of \$3.7 million, or 3%, compared to \$128.8 million for the third quarter of 2016. The ratio of gross profit to net sales was 44.7% in the third quarter of 2017 compared to 46.3% in the same quarter last year. The lower gross profit ratio during the current quarter is attributable to dilution of product margins from our acquisition and a less favorable mix in non-core products.

Selling, general and administrative expenses. Selling, general and administrative expenses were \$72.4 million during the third quarter of 2017, a decrease of \$0.5 million or 1%, compared to \$72.9 million in the third quarter of 2016 driven by the benefits from our global cost reduction program. Excluding acquisitions and related strategic transactions costs, organic constant currency selling, general and administrative expenses decreased 6%, or \$4 million, in the current period. Please refer to the Selling, general and administrative expenses table for a reconciliation of the year over year expense change.

| Selling, general, and administrative expenses (Percent Change) | Three Months Ended September 30, 2017 versus September 30, 2016 Consolidated Continuing Operations |
|---|--|
| GAAP reported change | (0.7)% |
| Currency translation effects | 1.6% |
| Constant currency change | (2.3)% |
| Acquisitions and related strategic transaction costs | 3.5% |
| Organic constant currency change | (5.8)% |

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 removing the percentage impact of currency translation effects from the overall percentage change in selling, general, and administrative expenses. Organic constant currency change in selling, general, and administrative expenses is calculated by removing the percentage impact from acquisitions as well as the currency translation effects from the overall percentage change in GAAP selling, general, and administrative expense. Management believes excluding acquisitions and currency translation effects provide 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 \$12.4 million during the third quarter of 2017, a decrease of \$0.8 million, or 6%, compared to \$13.1 million during the third quarter of 2016. Research and development expense was 4.2% of net sales in the third quarter of 2017, compared to 4.7% of net sales in the third quarter of 2016. We expect research and development expense to range from 4.0% to 4.5% of sales for the full year ending December 31, 2017 as we continue to develop new products for global safety markets.

Restructuring, net of adjustments. During the third quarter of 2017, the Company recorded restructuring charges of \$3.2 million, primarily related to severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth in Europe and right size our operations in Africa.

During the third quarter of 2016, the Company recorded restructuring charges of \$1.9 million, primarily related to severance costs for staff reductions associated with ongoing initiatives to right size our operations in Europe, Latin America, and Asia.

Currency exchange. Currency exchange losses were \$0.6 million in the third quarter of 2017, compared to losses of \$0.8 million in the third quarter of 2016. Currency exchange losses in the third quarter of 2017 were related to management of foreign currency exposure on unsettled inter-company balances. Refer to Note 16 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.

Other operating expense. Other operating expense during the third quarter of 2017 was \$3.3 million and relates primarily to defense costs for uninsured asserted cumulative trauma product liability claims. Cumulative trauma product liability claims incurred in the third quarter of 2016 were covered by insurance. Please refer to Note 18 to the unaudited Condensed Consolidated Financial Statements in Part I Item 1 of this Form 10-Q for additional information.

GAAP operating income. Consolidated operating income for the third quarter of 2017 was \$40.6 million compared to operating income of \$40.0 million in the same period last year. The increase in operating results was primarily driven by higher sales volumes as discussed above and lower selling, general, and administrative expenses resulting from our cost reduction programs. These increases were then mostly offset by the Other operating expense, the negative impact of currency exchange, and a decline in gross margins.

Adjusted operating income. Americas adjusted operating income for the third quarter of 2017 was \$47.3 million, an increase of \$5.8 million, or 14%, compared to \$41.5 million in the prior year quarter. The increase was related to the higher level of sales as well as lower selling, general, and administrative costs resulting from continued effective cost management.

International adjusted operating income for the third quarter of 2017 was \$9.1 million, a decrease of \$1.4 million, or 13%, compared to \$10.5 million in the prior year quarter. The decrease in adjusted operating income is primarily attributable to lower sales volumes.

Corporate segment adjusted operating loss for the third quarter of 2017 was \$8.6 million, an decrease of \$0.7 million, or 8%, compared to an adjusted operating loss of \$9.3 million in the third quarter of 2016, reflecting lower corporate development and legal expense partially offset by higher stock compensation expense.

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

| Adjusted operating income (In thousands) | Three Months Ended September 30, 2017 | | | Consolidated Continuing Operations |
|---|---------------------------------------|---------------|-----------|--|
| | Americas | International | Corporate | |
| Net sales | \$ 186,898 | \$ 109,231 | \$ — | \$ 296,129 |
| GAAP operating income | | | | 40,617 |
| Restructuring and other charges | | | | 3,214 |
| Currency exchange losses, net | | | | 562 |
| Other operating expense (Note 18) | | | | 3,346 |
| Adjusted operating income (loss) | 47,256 | 9,077 | (8,594) | 47,739 |
| Adjusted operating margin % | 25.3% | 8.3% | | |

| Adjusted operating income (In thousands) | Three Months Ended September 30, 2016 | | | Consolidated Continuing Operations |
|---|---------------------------------------|---------------|-----------|--|
| | Americas | International | Corporate | |
| Net sales | \$ 165,359 | \$ 112,874 | \$ — | \$ 278,233 |
| GAAP operating income | | | | 40,022 |
| Restructuring and other charges | | | | 1,889 |
| Currency exchange gains, net | | | | 790 |
| Other operating expense (Note 18) | | | | — |
| Adjusted operating income (loss) | 41,458 | 10,511 | (9,268) | 42,701 |
| Adjusted operating margin % | 25.1% | 9.3% | | |

Note: Adjusted operating income (loss) is a non-GAAP financial measure 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 non-cash impacts in the period such as restructuring, currency exchange and other operating expense related to increasing the cumulative trauma product liability reserve.

Total other expense, net. Other expense, net for the third quarter of 2017 was \$3.0 million, compared to \$2.4 million for the same period in 2016.

Income taxes. The reported effective tax rate for the third quarter of 2017 was 14.4% compared to 30.1% for the third quarter of 2016. The effective tax rate change was primarily due to a 6.6% benefit associated with the reduction of exit taxes related to our European reorganization, additional manufacturing deduction benefits and the release of a valuation allowance on foreign losses. For the full year ending December 31, 2017, we expect our effective tax rate to be 28% excluding the tax benefits associated with certain share-based payments related to the adoption of ASU 2016-09 and the reduction of exit taxes related to our European reorganization. We expect our effective tax rate to range from 29% to 31% for the full year ending December 31, 2018 but could be impacted by our geographic profile of profitability.

Net income from continuing operations attributable to MSA Safety Incorporated. Net income from continuing operations was \$32.1 million for the third quarter of 2017, or \$0.83 per diluted share compared to income of \$25.5 million, or \$0.67 per diluted share, for the same period last year.

Net loss from discontinued operations attributable to MSA Safety Incorporated. Net loss from discontinued operations was \$1.3 million for the third quarter of 2016, or \$0.04 per diluted share. There was no discontinued operations activity for the third quarter of 2017. Please refer to Note 19 to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q for additional discussion of discontinued operations.

Nine Months Ended September 30, 2017 Compared to Nine Months Ended September 30, 2016

Net Sales from continuing operations. Net sales for the nine months ended September 30, 2017 were \$850.7 million, a decrease of \$2.8 million, compared to \$853.5 million for the nine months ended September 30, 2016. Please refer to the Net Sales from Continuing Operations table for a reconciliation of the year over year sales change.

| Net Sales (In millions) | Nine Months Ended September 30, | | Dollar (Decrease) | Percent (Decrease) |
|---|---------------------------------|----------------|----------------------|-----------------------|
| | 2017 | 2016 | | |
| Consolidated Continuing Operations | \$850.7 | \$853.5 | \$(2.8) | —% |
| Americas | 528.4 | 510.3 | \$18.1 | 4% |
| International | 322.3 | 343.2 | \$(20.9) | (6)% |

| Net Sales from Continuing Operations (Percent Change) | Nine Months Ended September 30, 2017 versus September 30, 2016 | | |
|--|--|---------------|------------------------------------|
| | Americas | International | Consolidated Continuing Operations |
| GAAP reported sales change | 3.5% | (6.1)% | (0.3)% |
| Currency translation effects | 0.3% | (0.3)% | 0.1% |
| Constant currency sales change | 3.2% | (5.8)% | (0.4)% |
| Acquisitions | 3.9% | 0.7% | 2.6% |
| Organic constant currency sales change | (0.7)% | (6.5)% | (3.0)% |

Note: Organic 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. Organic constant currency sales change is calculated by deducting the percentage impact from acquisitions and currency translation effects from the overall percentage change in net sales.

Net sales for the Americas segment were \$528.4 million for the nine months ended September 30, 2017, an increase of \$18.1 million, or 4%, compared to \$510.3 million for the same period in 2016. During the nine months ended September 30, 2017, constant currency sales in the Americas segment increased 3% compared to the prior year period driven primarily by the acquisition of Globe on July 31, 2017 which provided a 4% increase in sales. We also saw growth in head protection and fall protection on improving conditions in industrial markets. These increases were partially offset by a lower level of shipments of self-contained breathing apparatus ("SCBA").

Net sales for the International segment were \$322.3 million for the nine months ended September 30, 2017, a decrease of \$20.9 million, or 6%, compared to \$343.2 million for the same period in 2016. Constant currency sales in the International segment decreased 6% during the nine months ended September 30, 2017, primarily due to a lower volume of military helmet sales in Europe as well as less breathing apparatus, fall protection and portable instruments sales across the segment. These decreases were partially offset by a higher volume of FGFD sales in the Middle East and head protection across the segment.

Gross profit. Gross profit for the nine months ended September 30, 2017 was \$385.8 million, an increase of \$0.5 million, compared to \$385.3 million for the same period in 2016. The ratio of gross profit to net sales was 45.4% during the nine months ended September 30, 2017 compared to 45.1% in the same period last year. The higher gross profit ratio during 2017 is attributable to improved margins across many of our core products offset by dilution of lower product margins from our acquisition.

Selling, general and administrative expenses. Selling, general and administrative expenses were \$222.3 million during the nine months ended September 30, 2017, a decrease of \$5.5 million or 2% compared to \$227.9 million in the nine months ended September 30, 2016 driven by the benefits from our global cost reduction program. Selling, general and administrative expenses were 26.1% of net sales for the nine months ended September 30, 2017, compared to 26.7% of net sales in the same period in 2016. Excluding acquisitions and strategic transactions costs, organic constant currency selling, general and administrative expenses decreased 5%, or \$11 million, in the current period. Please refer to the Selling, general and administrative expenses table for a reconciliation of the year over year expense change.

| Selling, general, and administrative expenses (Percent Change) | Nine Months Ended September 30, 2017 versus September 30, 2016 Consolidated Continuing Operations |
|---|---|
| GAAP reported change | (2.4)% |
| Currency translation effects | —% |
| Constant currency change | (2.4)% |
| Acquisitions and related strategic transaction costs | 2.7% |
| Organic constant currency change | (5.1)% |

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. Organic constant currency change in selling, general, and administrative expenses is calculated by removing the percentage impact from acquisitions as well as the currency translation effects from the overall percentage change in GAAP selling, general, and administrative expense. Management believes excluding acquisitions and currency translation effects provide 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 \$35.3 million during the nine months ended September 30, 2017, an increase of \$0.7 million, or 2% compared to \$34.6 million during the nine months ended September 30, 2016. Research and development expense was 4.1% of net sales for the nine months ended September 30, 2017, compared to 4.1% of net sales during the same period in 2016. We expect research and development expense to range from 4.0% to 4.5% of sales for the full year ending December 31, 2017 as we continue to develop new products for global safety markets.

Restructuring, net of adjustments. During the nine months ended September 30, 2017, the Company recorded restructuring charges of \$16.9 million, primarily related to the voluntary retirement incentive package described below and severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth in Europe and right size our operations in Australia and Africa.

In September 2016, certain employees in the Americas segment were offered a voluntary retirement incentive package (“VRIP”). The election window for participation closed on October 17, 2016. The employees were required to render service through January 31, 2017 to receive the VRIP and had until February 6, 2017 to revoke their election. None of the 83 employees who accepted the VRIP revoked their election to retire under the terms of the plan. Non-cash special termination benefit expense of \$11.4 million was incurred in the nine months ended September 30, 2017 related to these elections. All benefits were paid from our over funded North America pension plan.

During the nine months ended September 30, 2016, the Company recorded restructuring charges, net of adjustments, of \$3.7 million, primarily related to severance costs for staff reductions associated with ongoing initiatives to right size our operations in Europe, Latin America, and Asia.

Currency exchange. Currency exchange losses were \$4.0 million during the nine months ended September 30, 2017, compared to losses of \$2.5 million during the nine months ended September 30, 2016. Currency exchange losses in the first nine months of 2017 were related to management of foreign currency exposure on unsettled inter-company balances. Refer to Note 16 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.

Other operating expense. Other operating expense during the nine months ended September 30, 2017 was \$33.0 million and primarily relates to certain asserted cumulative trauma product liability claims which MSA LLC agreed to resolve in August 2017. This charge is related to legacy products designed, manufactured and sold many years ago and are not currently sold by the Company. Cumulative trauma product liability claims incurred in the nine months ended September 30, 2016 were covered by insurance. Please refer to Note 18 to the unaudited Condensed Consolidated Financial Statements in Part I Item 1 of this Form 10-Q for additional information.

GAAP operating income. Consolidated operating income for the nine months ended September 30, 2017 was \$74.3 million, compared to income of \$116.6 million in the same period last year. The reduction in operating income was primarily driven by the Other operating expense discussed above and restructuring charges associated with the voluntary retirement incentive package partially offset by lower selling, general, and administrative expenses resulting from our cost reduction programs and improvements in gross margins discussed above.

Adjusted operating income. Americas adjusted operating income for nine months ended September 30, 2017 was \$130.9 million, an increase of \$13.4 million, or 11%, compared to \$117.5 million in the same period in 2016. The improvement was driven by higher sales volumes and lower selling, general and administrative costs resulting from effective cost management. Additionally, we continued to see strength in gross margins during the nine months ended September 30, 2017 from improvements in margins across many of our core products.

International adjusted operating income for the nine months ended September 30, 2017 was \$26.7 million, a decrease of \$5.0 million, or 16%, compared to \$31.7 million in the same period in 2016. The decrease in adjusted operating income is primarily attributable to lower sales volumes.

Corporate segment adjusted operating loss for the nine months ended September 30, 2017 was \$29.4 million, an increase of \$3.1 million, or 12%, compared to an adjusted operating loss of \$26.3 million in the same period in 2016, reflecting higher stock compensation, corporate development and legal expense.

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

| Adjusted operating income (In thousands) | Nine Months Ended September 30, 2017 | | | Consolidated Continuing Operations |
|---|--------------------------------------|---------------|-----------|--|
| | Americas | International | Corporate | |
| Net sales | \$ 528,426 | \$ 322,243 | — | \$ 850,669 |
| GAAP operating income | | | | 74,341 |
| Restructuring and other charges | | | | 16,920 |
| Currency exchange losses, net | | | | 3,994 |
| Other operating expense (Note 18) | | | | 32,956 |
| Adjusted operating income (loss) | \$ 130,887 | \$ 26,691 | (29,367) | 128,211 |
| Adjusted operating margin % | 24.8% | 8.3% | | |

| Adjusted operating income (In thousands) | Nine Months Ended September 30, 2016 | | | Consolidated Continuing Operations |
|---|--------------------------------------|---------------|-----------|--|
| | Americas | International | Corporate | |
| Net sales | \$ 510,324 | \$ 343,175 | — | \$ 853,499 |
| GAAP operating income | | | | 116,648 |
| Restructuring and other charges | | | | 3,697 |
| Currency exchange losses, net | | | | 2,498 |
| Other operating expense (Note 18) | | | | — |
| Adjusted operating income (loss) | 117,475 | 31,659 | (26,291) | 122,843 |
| Adjusted operating margin % | 23.0% | 9.2% | | |

Note: Adjusted operating income is a non-GAAP financial measure used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income is reconciled above to the nearest GAAP financial measure, Operating income, and excludes non-cash impacts in the period such as restructuring, currency exchange and other operating expense for charges related to increasing the cumulative trauma product liability reserve.

Total other expense, net. Other expense, net for the nine months ended September 30, 2017 was \$8.5 million, compared to \$8.8 million for the same period in 2016.

Income taxes. The reported effective tax rate for the nine months ended September 30, 2017 was 9.6%, which included a benefit of 10.5% for certain share-based payments related to the adoption of ASU 2016-09 and a benefit of 3.8% associated with the reduction of exit taxes related to our European reorganization. The reported effective tax rate for the nine months ended September 30, 2016 was 36.0%, inclusive of 3.3% associated with exit taxes related to our European reorganization. The remaining effective tax rate change was primarily due to additional manufacturing deduction benefits and the release of a valuation allowance on foreign losses.

MSA finalized its European reorganization during 2016. The reorganization was designed to drive optimal performance by aligning certain strategic planning and decision making into a single location enabled by a common IT platform. During the nine months ended September 30, 2017, the Company had a benefit due to the reduction of \$2.5 million of charges associated with exit taxes related to our European reorganization, compared to expense of \$3.6 million for the nine months ended September 30, 2016.

In October 2016, the FASB issued ASU 2016-16, *Intra-entity Transfers of Assets Other than Inventory*. This ASU states that an entity should recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. We have early adopted this ASU on January 1, 2017 using the modified retrospective approach which resulted in a \$5.9 million cumulative-effect adjustment directly to retained earnings during the nine months ended September 30, 2017 for any previously deferred income tax effects.

In March 2016, the FASB issued ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting*, which we have adopted effective January 1, 2017. From an income tax perspective, this ASU requires that all excess tax benefits and deficiencies that pertain to share-based payment arrangements be recognized as a component of income tax expense rather than as a component of additional paid-in-capital. We expect this to create volatility in the effective tax rate on a go-forward basis as the impact is treated as a discrete item within our quarterly tax provision. The adoption of this standard resulted in a \$6.9 million tax benefit during the nine months ended September 30, 2017.

Please refer to Note 2 to the unaudited Condensed Consolidated Financial Statements in Part I Item 1 of this Form 10-Q for additional information regarding the two standards adopted.

For the full year ending December 31, 2017, we expect our effective tax rate to be 28% excluding the tax benefits associated with certain share-based payments related to the adoption of ASU 2016-09 and the reduction of exit taxes related to our European reorganization. We expect our effective tax rate to range from 29% to 31% for the full year ending December 31, 2018 but could be impacted by our geographic profile of profitability.

Net income from continuing operations attributable to MSA Safety Incorporated. Net income from continuing operations was \$59.0 million for the nine months ended September 30, 2017, or \$1.52 per diluted share, compared to income of \$67.5 million, or \$1.77 per diluted share, for the same period in 2016.

Net loss from discontinued operations attributable to MSA Safety Incorporated. Net loss from discontinued operations was \$0.5 million for the nine months ended September 30, 2016, or \$0.01 per diluted share. There was no discontinued operations activity for the first nine months of 2017. Please refer to Note 19 to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q for additional discussion of discontinued operations.

Non-GAAP Financial Information

We may provide information regarding organic constant currency changes, financial measures excluding the impact of acquisitions and related strategic transaction costs, adjusted operating income, and adjusted operating 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 GAAP measure, please refer to the reconciliations referenced above in Management's Discussion & Analysis section and in Note 8 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 main 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, acquisitions and dividend payments. Approximately 44% 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, primarily on our unsecured revolving credit facility that is due in 2020. At September 30, 2017, approximately 83% of our borrowings are denominated in US dollars, which limits our exposure to currency exchange rate fluctuations.

At September 30, 2017, we had cash and cash equivalents totaling \$112.2 million, of which \$99.3 million was held by our foreign subsidiaries. Cash and cash equivalents are held by our foreign subsidiaries whose earnings are considered indefinitely reinvested at September 30, 2017. These funds could be subject to additional income taxes if repatriated. It is not practicable to determine the potential income tax liability that we would incur if these funds were repatriated to the U.S. because the time and manner of repatriation is uncertain. We believe that domestic cash and cash equivalents, domestic cash flows from operations, annual repatriation of a portion of the current period's foreign earnings, and availability of our domestic line of credit continue to be sufficient to fund our domestic liquidity requirements.

Cash and cash equivalents decreased \$1.6 million during the nine months ended September 30, 2017, compared to increasing \$0.1 million during the same period in 2016.

Operating activities. Operating activities provided cash of \$189.2 million during the nine months ended September 30, 2017, compared to providing \$31.4 million during the same period in 2016. The increase in operating cash flows during the period was primarily attributable to higher insurance receivable collections. We collected \$88.5 million from insurance companies, net of product liability settlements paid, in the nine months ended September 30, 2017 while we paid settlements, net of collections from insurance companies, of \$61.9 million in the same period of 2016. Historically, cumulative trauma liability payments were funded with the Company's operating cash flow, pending resolution of disputed insurance coverage. Due to the recent success of collecting available insurance, the company expects to have annual cash flow streams from past and future settlements to fund the product liability reserve recorded in the second and third quarters of 2017. Although cash flows may vary from quarter to quarter, we do not expect there to be a material impact on our capital allocation priorities.

The amount recorded in connection with the recent settlements and remaining asserted cumulative trauma claims did not have a significant cash impact in the nine months ended September 30, 2017. Please refer to Note 18 to the unaudited Condensed Consolidated Financial Statements in Part I Item 1 of this Form 10-Q for additional information. Approximately \$72 million of the total \$92 million reserve relates to recent product liability settlements. The Company paid \$3 million in the third quarter of 2017 and will pay \$22 million for the settlements in the fourth quarter of 2017. The balance is expected to be paid ratably over 7 quarters beginning in the first quarter of 2018 and ending in the third quarter of 2019. The remaining \$20 million of the reserve relates primarily to estimated indemnity for all other remaining asserted cumulative trauma product liability claims that are probable and estimable at September 30, 2017.

Investing activities. Investing activities used cash of \$225.0 million during the nine months ended September 30, 2017, compared to using \$16.5 million in the same period in 2016. The acquisition of Globe drove cash outflows from investing activities in the first nine months of 2017. Refer to Note 14 to the Condensed Consolidated Financial Statements in Part I Item 1 of this Form 10-Q for additional information on the Globe acquisition. The sale of our South African personal protective equipment distribution business and its Zambian operations offset by the acquisition of Senscient drove cash outflows from investing activities in the first nine months of 2016. Refer to Note 19 to the Condensed Consolidated Financial Statements in Part I Item 1 of this Form 10-Q for a discussion of discontinued operations.

Financing activities. Financing activities provided cash of \$32.6 million during the nine months ended September 30, 2017, compared to using \$16.3 million during the same period in 2016. During the nine months ended September 30, 2017, we had net borrowings of approximately \$76 million as borrowings to fund the Globe acquisition were partially offset as we used our insurance receivables proceeds to make payments. This compared to net borrowings of \$16 million during the same period in 2016. We paid cash dividends of \$39.2 million during the nine months ended September 30, 2017 compared to \$36.7 million in the same period in 2016. We also used cash of \$11.8 million during the nine months ended September 30, 2017 to repurchase shares under our 2015 stock repurchase program. We expect to make a long-term debt repayment of approximately \$30 million in the fourth quarter of 2017.

CUMULATIVE TRANSLATION ADJUSTMENTS

The position of the U.S. dollar relative to international currencies at September 30, 2017 resulted in a translation gain of \$32.2 million being recorded to the cumulative translation adjustments shareholders' equity account during the nine months ended September 30, 2017, compared to a loss of \$4.0 million during the same period in 2016. The translation gain during the nine months ended September 30, 2017 was primarily related to the strengthening of the euro, British pound, and Mexican peso relative to the U.S. dollar. The translation loss during the nine months ended September 30, 2016 was primarily related to the strengthening of the U.S. dollar against the British pound.

COMMITMENTS AND CONTINGENCIES

We made contributions of \$4.4 million to our pension plans during the nine months ended September 30, 2017. We expect to make total contributions of approximately \$5.9 million to our pension plans in 2017 which are primarily associated with our International segment.

The Company had outstanding bank guarantees and standby letters of credit with banks as of September 30, 2017 totaling \$13.2 million, of which \$6.6 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. No amounts were drawn on these arrangements at September 30, 2017. The Company is also required to provide cash collateral in connection with certain arrangements. At September 30, 2017, the Company has \$0.8 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 to the Condensed Consolidated Financial Statements in Part I Item 1 of this Form 10-Q for further discussion on the Company's product liabilities.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

We prepare our consolidated financial statements in accordance with U.S. generally accepted accounting principles (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 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, 2016.

RECENTLY ADOPTED AND RECENTLY ISSUED ACCOUNTING STANDARDS

Please refer to Note 2 to the 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 \$12.7 million and \$0.9 million, respectively, for the three months ended September 30, 2017.

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 September 30, 2017, we had open foreign currency forward contracts with a U.S. dollar notional value of \$77.1 million. A hypothetical 10% increase in September 30, 2017 forward exchange rates would result in a \$7.7 million increase in the fair value of these contracts.

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. Because of the relatively short maturities of temporary investments, these financial instruments are reported at carrying values that approximate fair values.

At September 30, 2017, we had \$207.0 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 \$14.1 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 September 30, 2017, we had \$266.8 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.

Management will exclude Globe from its assessment of internal control over financial reporting as of December 31, 2017 because it was acquired by the Company in a purchase business combination in the third quarter of 2017. Globe is wholly-owned by MSA.

- (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

We 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 materially 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 1,435 cumulative trauma lawsuits comprised of 2,271 claims at September 30, 2017. Cumulative trauma product liability claims involve exposures to harmful substances (e.g., silica, asbestos and coal dust) that occurred many 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. Although we have reserved against the claims currently outstanding, the reserve does not take into account any cumulative trauma incurred but not reported (“IBNR”) claims, which losses could have a materially adverse effect on our business, operating results, financial condition and liquidity. 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 with respect to claims included within the existing reserve. We will adjust the reserve for our liability relating to cumulative trauma claims from time to time based on the maturation of claims, developing facts and circumstances, and if actual experience differs from previous projections. These adjustments may reflect estimated liabilities for cumulative trauma IBNR claims, in the event we become able to reasonably estimate the magnitude of potential losses, which we are currently evaluating based on recent claims experience. These adjustments may be material and could increase the year over year variability of our financial results or 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 amounts believed to be recoverable under insurance. MSA LLC has recorded insurance receivables totaling \$108.7 million at September 30, 2017. As described in greater detail in Note 18 of the Condensed Consolidated Financial Statements, MSA LLC is currently involved in insurance coverage litigation regarding the rights and obligations under numerous insurance policies, and for the payment of amounts recorded as insurance receivables. Various factors could affect the timing and amount of recovery of insurance receivables, including: the outcome of coverage litigation, the outcome of negotiations with insurers, and the extent to which insurers may become insolvent in the future. Failure to recover amounts due from MSA LLC’s insurance carriers would result in it being unable to recover amounts already paid to resolve claims (and recorded as insurance receivables) and could have a materially adverse effect on our business, consolidated operating results, financial condition and liquidity.

Even if insurance coverage litigation is generally successful, the amount of our current reserve exceeds our potential insurance coverage and MSA LLC is largely self-insured for costs associated with cumulative trauma product liability claims currently included in our reserve as well as for future claims. Going forward, most of the costs in excess of our expected coverage capacity will be expensed without the expectation such costs will be covered by insurance reimbursement. MSA LLC expects to obtain some limited insurance reimbursement from negotiated coverage-in-place agreements (although that coverage may not be immediately triggered or accessible) or from other sources of coverage, but the precise amount of insurance reimbursement that may be available cannot be determined with specificity at this time.

Further, MSA LLC may experience an increase in newly filed claims or more aggressive settlement demands from plaintiffs at any time and since MSA LLC is largely self-insured for such claims, we could experience greater year over year variability in our consolidated financial results.

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 adverse publicity against us could have a materially adverse effect on our business, consolidated operating results, financial condition and liquidity, including any successful claim brought against us in excess or outside of available insurance coverage.

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 |
|------------------------|----------------------------------|------------------------------|--|--|
| July 1 - 31, 2017 | — | \$ — | — | 1,158,888 |
| August 1 - 31, 2017 | 151,375 | 69.60 | 150,404 | 1,131,355 |
| September 1 - 30, 2017 | 18,537 | 70.96 | 18,537 | 1,020,188 |

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 168,941 shares during the quarter ended September 30, 2017 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

October 20, 2017

/s/ Kenneth D. Krause

Kenneth D. Krause

Vice President, Chief Financial Officer and Treasurer

Duly Authorized Officer and Principal Financial Officer

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

I, William M. Lambert, 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.

October 20, 2017

/s/ William M. Lambert

William M. Lambert

Chairman, President and Chief Executive Officer

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.

October 20, 2017

/s/ Kenneth D. Krause

Kenneth D. Krause

Vice President, Chief Financial Officer and Treasurer

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 September 30, 2017 (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.

October 20, 2017

/s/ William M. Lambert

William M. Lambert

Chairman, President and Chief Executive Officer

/s/ Kenneth D. Krause

Kenneth D. Krause

Vice President, Chief Financial Officer and Treasurer