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

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2019

OR

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

For the transition period from __________ to __________

Commission file number: 1-6003

FEDERAL SIGNAL CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**36-1063330**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*

1415 West 22nd Street, Oak Brook, Illinois
(Address of principal executive offices)

60523
(Zip code)

(630) 954-2000
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $1.00 per share	FSS	New York Stock Exchange

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

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

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

Large accelerated filer	☑	Accelerated filer	☐
Non-accelerated filer	☐	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 September 30, 2019, the number of shares outstanding of the registrant's common stock was 60,508,293.

FEDERAL SIGNAL CORPORATION

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FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q ("Form 10-Q") is being filed by Federal Signal Corporation and its subsidiaries (referred to collectively as the "Company," "we," "our" or "us" herein, unless the context otherwise indicates) with the United States ("U.S.") Securities and Exchange Commission (the "SEC"), and includes comments made by management that may contain words such as "may," "will," "believe," "expect," "anticipate," "intend," "plan," "project," "estimate" and "objective" or similar terminology, or the negative thereof, concerning the Company's future financial performance, business strategy, plans, goals and objectives. These expressions are intended to identify forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the Private Securities Litigation Reform Act of 1995. Forward-looking statements include information concerning the Company's possible or assumed future performance or results of operations and are not guarantees. While these statements are based on assumptions and judgments that management has made in light of industry experience as well as perceptions of historical trends, current conditions, expected future developments and other factors believed to be appropriate under the circumstances, they are subject to risks, uncertainties and other factors that may cause the Company's actual results, performance or achievements to be materially different.

These risks and uncertainties, some of which are beyond the Company's control, include the risk factors described under Part I, Item 1A, *Risk Factors*, of the Company's Annual Report on Form 10-K for the year ended December 31, 2018, which was filed with the SEC on February 28, 2019, and as updated in Part II, Item 1A, *Risk Factors* of this Form 10-Q. These factors may not constitute all factors that could cause actual results to differ materially from those discussed in any forward-looking statement. The Company operates in a continually changing business environment and new factors emerge from time to time. The Company cannot predict such factors, nor can it assess the impact, if any, of such factors on its results of operations, financial condition or cash flow. Accordingly, forward-looking statements should not be relied upon as a predictor of actual results. The Company disclaims any responsibility to update any forward-looking statement provided in this Form 10-Q.

ADDITIONAL INFORMATION

The Company is subject to the reporting and information requirements of the Exchange Act and, as a result, is obligated to file Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other reports and information with the SEC, as well as amendments to those reports. The Company makes these filings available free of charge through our website at www.federalsignal.com as soon as reasonably practicable after such materials are filed with, or furnished to, the SEC. Information on our website does not constitute part of this Form 10-Q.

PART I. FINANCIAL INFORMATION

Item 1. *Financial Statements (Unaudited).*

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
(in millions, except per share data)	**2019**	**2018**	**2019**	**2018**
Net sales	$ 308.8	$ 269.4	$ 906.9	$ 810.1
Cost of sales	226.8	200.4	665.6	600.0
Gross profit	82.0	69.0	241.3	210.1
Selling, engineering, general and administrative expenses	43.0	38.2	128.7	120.7
Acquisition and integration-related expenses	0.4	0.4	1.9	1.3
Operating income	38.6	30.4	110.7	88.1
Interest expense	2.1	2.2	6.1	7.2
Other expense, net	0.2	—	0.5	0.5
Income before income taxes	36.3	28.2	104.1	80.4
Income tax expense	7.9	6.5	25.4	18.9
Net income	$ 28.4	$ 21.7	$ 78.7	$ 61.5
Earnings per share:				
Basic	$ 0.47	$ 0.36	$ 1.31	$ 1.03
Diluted	0.46	0.36	1.28	1.01
Weighted average common shares outstanding:				
Basic	60.2	60.0	60.1	59.9
Diluted	61.4	61.1	61.3	61.0

See notes to condensed consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Unaudited)

(in millions)	Three Months Ended September 30, 2019	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
Net income	$ 28.4	$ 21.7	$ 78.7	$ 61.5
Other comprehensive (loss) income:				
Change in foreign currency translation adjustment	(3.8)	(0.4)	(3.0)	(3.6)
Change in unrecognized net actuarial loss and prior service cost related to pension benefit plans, net of income tax expense of $0.2, $0.2, $0.5 and $0.6, respectively	1.3	1.0	2.8	2.8
Change in unrealized gain on derivatives, net of income tax (benefit) expense of $(0.1), $0.0, $(0.5) and $0.3, respectively	(0.1)	0.1	(1.3)	1.1
Total other comprehensive (loss) income	(2.6)	0.7	(1.5)	0.3
Comprehensive income	$ 25.8	$ 22.4	$ 77.2	$ 61.8

See notes to condensed consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED BALANCE SHEETS

(in millions, except per share data)	September 30, 2019 (Unaudited)	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 35.9	$ 37.4
Accounts receivable, net of allowances for doubtful accounts of $2.4 and $1.6, respectively	142.5	124.4
Inventories	189.1	157.3
Prepaid expenses and other current assets	12.7	9.4
Total current assets	380.2	328.5
Properties and equipment, net of accumulated depreciation of $123.3 and $116.0, respectively	81.1	62.0
Rental equipment, net of accumulated depreciation of $42.1 and $30.0, respectively	111.7	96.6
Operating lease right-of-use assets	28.5	—
Goodwill	392.1	375.1
Intangible assets, net of accumulated amortization of $19.7 and $13.4, respectively	165.1	143.1
Deferred tax assets	10.4	12.5
Deferred charges and other long-term assets	4.1	5.6
Long-term assets of discontinued operations	0.4	0.4
Total assets	$ 1,173.6	$ 1,023.8
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term borrowings and finance lease obligations	$ 0.2	$ 0.2
Accounts payable	70.5	66.1
Customer deposits	12.7	10.1
Accrued liabilities:		
Compensation and withholding taxes	30.2	29.5
Other current liabilities	50.2	52.7
Current liabilities of discontinued operations	0.2	0.2
Total current liabilities	164.0	158.8
Long-term borrowings and finance lease obligations	249.1	209.9
Long-term operating lease liabilities	21.9	—
Long-term pension and other postretirement benefit liabilities	54.4	54.6
Deferred gain	—	6.8
Deferred tax liabilities	56.6	46.3
Other long-term liabilities	22.2	15.9
Long-term liabilities of discontinued operations	1.2	1.4
Total liabilities	569.4	493.7
Stockholders' equity:		
Common stock, $1 par value per share, 90.0 shares authorized, 66.9 and 66.4 shares issued, respectively	66.9	66.4
Capital in excess of par value	225.5	217.0
Retained earnings	503.2	432.5
Treasury stock, at cost, 6.4 and 6.2 shares, respectively	(92.6)	(88.5)
Accumulated other comprehensive loss	(98.8)	(97.3)
Total stockholders' equity	604.2	530.1
Total liabilities and stockholders' equity	$ 1,173.6	$ 1,023.8

See notes to condensed consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (Unaudited)

	Nine Months Ended September 30,	
(in millions)	**2019**	**2018**
Operating activities:		
Net income	$ 78.7	$ 61.5
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	30.1	27.0
Deferred financing costs	0.3	0.3
Deferred gain	—	(1.4)
Stock-based compensation expense	5.9	5.8
Pension expense, net of funding	(0.1)	(7.6)
Changes in fair value of contingent consideration and deferred payment	0.8	0.8
Payments for acquisition-related activity	(3.1)	—
Deferred income taxes	8.6	1.8
Changes in operating assets and liabilities	(62.6)	(16.4)
Net cash provided by operating activities	58.6	71.8
Investing activities:		
Purchases of properties and equipment	(21.2)	(10.1)
(Payments for) proceeds from acquisition-related activity	(49.6)	3.0
Other, net	0.5	—
Net cash used for investing activities	(70.3)	(7.1)
Financing activities:		
Increase (decrease) in revolving lines of credit, net	37.5	(53.6)
Payments of debt financing fees	(1.0)	—
Purchases of treasury stock	(1.0)	—
Redemptions of common stock to satisfy withholding taxes related to stock-based compensation	(1.9)	(0.4)
Payments for acquisition-related activity	(10.3)	—
Cash dividends paid to stockholders	(14.5)	(13.8)
Proceeds from stock-based compensation activity	1.7	1.1
Other, net	—	0.1
Net cash provided by (used for) financing activities	10.5	(66.6)
Effects of foreign exchange rate changes on cash and cash equivalents	(0.3)	(0.6)
Decrease in cash and cash equivalents	(1.5)	(2.5)
Cash and cash equivalents at beginning of year	37.4	37.5
Cash and cash equivalents at end of period	$ 35.9	$ 35.0

See notes to condensed consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (Unaudited)

	Three Months Ended September 30, 2019					
(in millions)	Common Stock	Capital in Excess of Par Value	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total
Balance at July 1, 2019	$ 66.7	$ 221.3	$ 479.7	$ (91.4)	$ (96.2)	$ 580.1
Net income			28.4			28.4
Total other comprehensive loss					(2.6)	(2.6)
Cash dividends declared ($0.08 per share)			(4.9)			(4.9)
Stock-based payments:						
Stock-based compensation		1.7				1.7
Stock option exercises and other	0.2	2.5		(1.2)		1.5
Balance at September 30, 2019	$ 66.9	$ 225.5	$ 503.2	$ (92.6)	$ (98.8)	$ 604.2

	Three Months Ended September 30, 2018					
(in millions)	Common Stock	Capital in Excess of Par Value	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total
Balance at July 1, 2018	$ 66.3	$ 212.7	$ 377.4	$ (86.7)	$ (77.3)	$ 492.4
Net income			21.7			21.7
Total other comprehensive income					0.7	0.7
Cash dividends declared ($0.08 per share)			(4.8)			(4.8)
Stock-based payments:						
Stock-based compensation		1.8				1.8
Stock option exercises and other	—	0.4		(0.4)		—
Balance at September 30, 2018	$ 66.3	$ 214.9	$ 394.3	$ (87.1)	$ (76.6)	$ 511.8

	Nine Months Ended September 30, 2019					
(in millions)	Common Stock	Capital in Excess of Par Value	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total
Balance at January 1, 2019	$ 66.4	$ 217.0	$ 432.5	$ (88.5)	$ (97.3)	$ 530.1
Net income			78.7			78.7
Total other comprehensive loss					(1.5)	(1.5)
Cash dividends declared ($0.24 per share)			(14.5)			(14.5)
Impact of adoption of ASU 2016-02			6.5			6.5
Stock-based payments:						
Stock-based compensation		5.2				5.2
Stock option exercises and other	0.4	3.4		(2.2)		1.6
Performance share unit transactions	0.1	(0.1)		(0.9)		(0.9)
Stock repurchase program				(1.0)		(1.0)
Balance at September 30, 2019	$ 66.9	$ 225.5	$ 503.2	$ (92.6)	$ (98.8)	$ 604.2

(in millions)	Common Stock	Capital in Excess of Par Value	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total
	Nine Months Ended September 30, 2018					
Balance at January 1, 2018	$ 66.1	$ 207.7	$ 346.6	$ (86.1)	$ (76.9)	$ 457.4
Net income			61.5			61.5
Total other comprehensive income					0.3	0.3
Cash dividends declared ($0.23 per share)			(13.8)			(13.8)
Stock-based payments:						
Stock-based compensation		5.1				5.1
Stock option exercises and other	0.2	2.1		(1.0)		1.3
Balance at September 30, 2018	$ 66.3	$ 214.9	$ 394.3	$ (87.1)	$ (76.6)	$ 511.8

See notes to condensed consolidated financial statements.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization and Description of the Business

Federal Signal Corporation was founded in 1901 and was reincorporated as a Delaware corporation in 1969. References herein to the "Company," "we," "our" or "us" refer collectively to Federal Signal Corporation and its subsidiaries.

Products manufactured and services rendered by the Company are divided into two reportable segments: Environmental Solutions Group and Safety and Security Systems Group. The individual operating businesses are organized as such because they share certain characteristics, including technology, marketing, distribution and product application, which create long-term synergies. These segments are discussed in Note 13 – Segment Information.

Basis of Presentation and Consolidation

The accompanying unaudited condensed consolidated financial statements represent the consolidation of Federal Signal Corporation and its subsidiaries included herein and have been prepared by the Company pursuant to the rules and regulations of the United States ("U.S.") Securities and Exchange Commission (the "SEC"). Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. generally accepted accounting principles ("GAAP") have been condensed or omitted pursuant to such rules and regulations, although the Company believes that the disclosures presented herein are adequate to ensure the information presented is not misleading. Except as otherwise noted, these condensed consolidated financial statements have been prepared in accordance with the Company's accounting policies described in the Company's Annual Report on Form 10-K for the year ended December 31, 2018, and should be read in conjunction with those consolidated financial statements and the notes thereto.

In addition, as discussed in Note 2 – Acquisitions, on July 1, 2019, the Company completed the acquisition of substantially all of the assets and operations of Mark Rite Lines Equipment Company, Inc. ("MRL"), a U.S. manufacturer of truck-mounted and ride-on road-marking equipment, including its wholly-owned subsidiary HighMark Traffic Services, Inc. The Condensed Consolidated Balance Sheet as of September 30, 2019 includes preliminary fair values assigned to the assets acquired and liabilities assumed in connection with the acquisition, whereas the Condensed Consolidated Statements of Operations for the three and nine months ended September 30, 2019 include the post-acquisition operating results of MRL.

These condensed consolidated financial statements include all normal and recurring adjustments that we considered necessary to present a fair statement of our results of operations, financial condition and cash flow. Intercompany balances and transactions have been eliminated in consolidation.

The results reported in these condensed consolidated financial statements should not be regarded as necessarily indicative of results that may be expected for the entire year. While we label our quarterly information using a calendar convention whereby our first, second and third quarters are labeled as ending on March 31, June 30 and September 30, respectively, it is our longstanding practice to establish interim quarterly closing dates based on a 13-week period ending on a Saturday, with our fiscal year ending on December 31. The effects of this practice are not material and exist only within a reporting year.

Recent Accounting Pronouncements and Accounting Changes

In February 2016, the Financial Accounting Standards Board (the "FASB") issued Accounting Standards Update ("ASU") No. 2016-02, *Leases* ("Topic 842"), which supersedes the lease accounting requirements in Accounting Standards Codification ("ASC") 840, *Leases* ("Topic 840"). Topic 842 requires organizations that are lessees in operating lease arrangements to recognize right-of-use assets and lease liabilities on the balance sheet and requires disclosure of key qualitative and quantitative information about leasing arrangements by both lessors and lessees. The Company adopted Topic 842 effective January 1, 2019, using the alternative transition method outlined in ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*, which permits application of the new guidance at the beginning of the period of adoption, with comparative periods continuing to be reported under Topic 840. See Note 4 – Leases for further discussion.

No other new accounting pronouncements issued, but not yet adopted, are expected to have a material impact on the Company's results of operations, financial position or cash flow.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect (i) the reported amounts of assets and liabilities, (ii) the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and (iii) the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

As described in Note 2 – Acquisitions, amounts allocated to certain assets acquired and liabilities assumed in connection with the acquisition of MRL are considered preliminary as of September 30, 2019 and are subject to change during the measurement period.

Significant Accounting Policies

Following the adoption of Topic 842, the Company's lease accounting policy is and will be disclosed as a significant accounting policy. See Note 4 – Leases for further discussion. There have been no other changes to the Company's significant accounting policies as disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2018.

NOTE 2 – ACQUISITIONS

Acquisition of MRL

On July 1, 2019, the Company completed the acquisition of substantially all of the assets and operations of MRL, a U.S. manufacturer of truck-mounted and ride-on road-marking equipment, including its wholly-owned subsidiary HighMark Traffic Services, Inc. The Company expects that the acquisition will provide an efficient entry into a new line of product offerings and access to new markets. As the acquisition closed on July 1, 2019, the assets and liabilities of MRL have been consolidated into the Condensed Consolidated Balance Sheet as of September 30, 2019, while the post-acquisition results of operations have been included in the Condensed Consolidated Statements of Operations, within the Environmental Solutions Group.

The initial cash consideration paid by the Company to acquire MRL was approximately $49.8 million, net of certain preliminary closing adjustments, including working capital. Any additional closing adjustments are expected to be finalized before the end of the fourth quarter of 2019. In addition, the transaction may include additional consideration of up to $15.5 million, contingent upon the achievement of specified financial results in future reporting periods (i.e., an earn-out). The contingent earn-out payment, if earned, would be due to be paid following the third anniversary of the closing.

The acquisition is being accounted for in accordance with ASC 805, *Business Combinations*. Accordingly, the total purchase price has been allocated on a preliminary basis to assets acquired and liabilities assumed in connection with the acquisition based on their estimated fair values as of the completion of the acquisition. A single estimate of fair value results from a complex series of judgments about future events and uncertainties and relies heavily on estimates and assumptions. The Company's judgments used to determine the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives, can materially impact the Company's results of operations. Due to the proximity of the date of acquisition to the date of issuance of the condensed consolidated financial statements, the Company's purchase price allocation as of September 30, 2019 reflects various provisional estimates that were based on the information that was available as of the acquisition date and the filing date of this Form 10-Q. The Company believes that information provides a reasonable basis for estimating the fair values of assets acquired and liabilities assumed, however the determination of those fair values is not yet finalized. Thus, the preliminary measurements of fair value set forth in the table below are subject to change during the measurement period as valuations are finalized. The Company expects to finalize the valuation and complete the purchase price allocation as soon as practicable.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — (CONTINUED)
(Unaudited)

The following table summarizes the preliminary fair value of assets acquired and liabilities assumed as of the acquisition date:

(in millions)		
Purchase price, inclusive of preliminary closing adjustments [a]	$	49.8
Estimated fair value of additional consideration [b]		7.9
Total consideration		57.7
Cash		0.2
Accounts receivable		3.2
Inventories		12.9
Prepaid expenses and other current assets		0.3
Properties and equipment		6.4
Operating lease right-of-use assets		4.6
Other long-term assets		0.1
Customer relationships [c]		17.7
Trade names [d]		9.0
Other intangible assets		1.4
Operating lease liabilities		(4.6)
Accounts payable		(3.7)
Accrued liabilities		(1.0)
Customer deposits		(5.9)
Deferred tax liabilities		(1.4)
Net assets acquired		39.2
Goodwill [e]	$	18.5

(a) The initial purchase price was funded with borrowings under the Company's revolving credit facility.

(b) Represents the preliminary estimated fair value of the contingent earn-out payment as of the acquisition date, which is included as a component of Other long-term liabilities on the Condensed Consolidated Balance Sheet. See Note 14 – Fair Value Measurements for discussion of the methodology used to determine the fair value of the contingent earn-out payment.

(c) Represents the preliminary fair value assigned to customer relationships, which are considered to be definite-lived intangible assets, with a preliminary estimated useful life of approximately 12 years.

(d) Represents the preliminary fair value assigned to trade names, which are considered to be indefinite-lived intangible assets.

(e) Goodwill, the majority of which is tax-deductible, has been allocated to the Environmental Solutions Group on the basis that the synergies identified will primarily benefit this segment.

In the period between the July 1, 2019 closing date and September 30, 2019, MRL generated approximately $22.6 million of net sales and $2.3 million of operating income. The Company has included the operating results of MRL within the Environmental Solutions Group in its condensed consolidated financial statements since the closing date.

Acquisition of JJE

In connection with the June 3, 2016 acquisition of substantially all of the assets and operations of Joe Johnson Equipment, Inc. and Joe Johnson Equipment (USA), Inc. (collectively, "JJE"), the Company paid initial cash consideration of approximately $96.6 million. During the third quarter of 2019, the Company paid additional consideration of C$10 million (approximately $7.6 million) to settle the contingent consideration liability, based on the achievement of specified financial results over the three-year period following the closing of the acquisition. During the third quarter of 2019, the Company also paid C$7.6 million (approximately $5.8 million) to fund substantially all of the deferred payment. Of the total $13.4 million of additional consideration funded during the third quarter of 2019, $3.1 million has been included as a component of Net cash provided by operating activities within the Condensed Consolidated Statements of Cash Flows, with the remaining $10.3 million, representing the fair value of the additional consideration established in the Company's purchase price allocation, being included as a component of Net cash provided by (used for) financing activities.

NOTE 3 – REVENUE RECOGNITION

The following table presents the Company's Net sales disaggregated by geographic region, based on the location of the end customer, and by major product line:

(in millions)	Three Months Ended September 30, 2019	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
Geographic Region:				
U.S.	$ 252.6	$ 215.2	$ 705.6	$ 632.5
Canada	35.6	34.5	131.2	112.7
Europe/Other	20.6	19.7	70.1	64.9
Total net sales	$ 308.8	$ 269.4	$ 906.9	$ 810.1
Major Product Line:				
Environmental Solutions				
Vehicles and equipment (a)	$ 198.3	$ 170.9	$ 585.7	$ 511.7
Parts	34.4	30.0	101.0	92.2
Rental income (b)	12.1	11.2	35.1	30.6
Other (c)	9.2	4.2	18.9	11.7
Total	254.0	216.3	740.7	646.2
Safety and Security Systems				
Public safety and security equipment	31.6	29.7	98.6	97.0
Industrial signaling equipment	15.1	13.2	45.1	39.9
Warning systems	8.1	10.2	22.5	27.0
Total	54.8	53.1	166.2	163.9
Total net sales	$ 308.8	$ 269.4	$ 906.9	$ 810.1

(a) Includes net sales from the sale of new and used vehicles and equipment, including sales of rental equipment.
(b) Represents income from vehicle and equipment lease arrangements with customers.
(c) Primarily includes revenues from services, such as maintenance and repair work, and the sale of extended warranty contracts.

Contract Balances

The Company recognizes contract liabilities when cash payments, such as customer deposits, are received in advance of the Company's satisfaction of the related performance obligations. Contract liabilities are recognized as Net sales when the related performance obligations are satisfied, which generally occurs within three to six months of the cash receipt. Contract liability balances are not materially impacted by any other factors. The Company's contract liabilities were $15.0 million and $12.1 million as of September 30, 2019 and December 31, 2018, respectively. Contract assets, such as unbilled receivables, were not material as of any of the periods presented herein.

NOTE 4 – LEASES

Impact of the Adoption of Topic 842

On January 1, 2019, the Company adopted Topic 842, using the alternative transition method under ASU 2018-11, which permits application of the new guidance at the beginning of the period of adoption, with comparative periods continuing to be reported under Topic 840. The Company elected to apply the practical expedient package outlined in the transition guidance which, among other things, allows for the carryforward of historical lease classifications. In addition, the Company elected to separately account for non-lease and associated lease components and apply the short-term lease exception, whereby the Company does not recognize a right-of-use asset or lease liability for leases with an initial term of 12 months or less.

Upon adoption, the Company recognized operating lease right-of-use assets and liabilities on its Condensed Consolidated Balance Sheet of $27.1 million and $29.5 million, respectively. In addition, the Company recognized the remaining deferred gain of $8.7 million associated with the sale-leaseback transactions that the Company entered into in July 2008 for its Elgin, Illinois and University Park, Illinois plant locations, net of the related deferred tax asset of $2.2 million, as a cumulative effect adjustment to opening retained earnings as of the January 1, 2019 adoption date. Prior to the adoption of Topic 842, the deferred gain, which initially totaled $29.0 million, had been amortized through the Company’s Condensed Consolidated Statements of Operations on a straight-line basis over the 15-year life of the respective leases. Effective in 2019, approximately $1.9 million of the deferred gain, which had been recognized each year since 2008, will no longer be recognized through the Condensed Consolidated Statements of Operations.

Other than the aforementioned elimination of the deferred gain recognition, the adoption of Topic 842 did not have a material impact on the Company’s results of operations or cash flows. Further, the adoption of Topic 842 did not have an impact on the Company’s liquidity or debt-covenant compliance under its current arrangements.

Description of Leases

The Company leases certain facilities within the U.S., Europe and Canada from which the Company manufactures vehicles and equipment, and provides sales, service and/or equipment rentals. Some of the Company’s lease agreements contain options to renew. The Company also leases vehicles and various other equipment. The Company’s lease agreements may contain lease and non-lease components, which are accounted for separately.

In connection with the 2016 acquisition of JJE, the Company entered into lease agreements for two facilities owned by affiliates of the sellers of JJE. Both agreements include an annual rent that is considered market-based and were for an initial lease term of five years, with options to renew. The total lease liability under these agreements to the former owners of JJE, certain of whom are now employees of the Company, was $0.5 million as of September 30, 2019.

In connection with the current-year acquisition of MRL, the Company entered into lease agreements for five facilities owned by affiliates of the sellers of MRL. With the exception of one lease, which has a term of one year, all such lease agreements have lease terms of five years. All lease agreements contain an annual rent that is considered to be market-based and include options to renew. In the three and nine months ended September 30, 2019, total rent paid under these agreements to the former owners of MRL, certain of whom are now employees of the Company, was $0.3 million, and the total lease liability was $4.4 million as of September 30, 2019.

The Company determines if an arrangement is a lease at inception. Operating lease right-of-use assets represent the Company’s right to use an underlying asset for the lease term and lease liabilities represent the Company’s obligation to make lease payments arising from the lease. Operating lease right-of-use assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. As most of the Company’s leases do not provide an implicit rate, the Company uses its incremental collateralized borrowing rate based on the information available at the commencement date in determining the present value of lease payments. Implicit rates are used when readily determinable. The Company’s lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense for operating lease payments is recognized on a straight-line basis over the respective lease term.

The following table summarizes the Company's total lease costs and supplemental cash flow information arising from operating lease transactions:

(in millions)	Three Months Ended September 30, 2019	Nine Months Ended September 30, 2019
Total operating lease costs [(a)]	$ 3.2	$ 9.3
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 2.3	$ 6.3

(a) Includes short-term leases and variable lease costs, which are immaterial.

The following table summarizes the components of lease right-of-use assets and liabilities:

(in millions)	September 30, 2019	Affected Line Item in Condensed Consolidated Balance Sheets
Assets		
Operating lease right-of-use assets	$ 28.5	Operating lease right-of-use assets
Finance lease right-of-use assets	0.6	Properties and equipment, net of accumulated depreciation
Total lease right-of-use assets	$ 29.1	
Liabilities		
Current:		
Operating leases	$ 8.8	Other current liabilities
Finance leases	0.2	Current portion of long-term borrowings and finance lease obligations
Noncurrent:		
Operating leases	21.9	Long-term operating lease liabilities
Finance leases	0.4	Long-term borrowings and finance lease obligations
Total lease liabilities	$ 31.3	

As of September 30, 2019, the Company's operating leases have a weighted-average remaining lease term of 4.0 years and a weighted-average discount rate of 3.8%.

Maturities of operating lease liabilities as of September 30, 2019 were as follows:

(in millions)	
2019 (excluding the nine months ended September 30, 2019)	$ 2.3
2020	8.9
2021	8.2
2022	7.2
2023	4.5
Thereafter	2.1
Total lease payments	33.2
Less: Imputed interest	2.5
Present value of operating lease liabilities	$ 30.7

At December 31, 2018, minimum future rental commitments under operating leases having non-cancelable lease terms in excess of one year, as previously determined in accordance with Topic 840, aggregated $34.3 million and were payable as follows: $8.9 million in 2019, $8.0 million in 2020, $6.9 million in 2021, $5.9 million in 2022, $3.4 million in 2023 and $1.2 million thereafter.

NOTE 5 – INVENTORIES

The following table summarizes the components of Inventories:

(in millions)	September 30, 2019	December 31, 2018
Finished goods	$ 85.1	$ 78.3
Raw materials	85.5	66.3
Work in process	18.5	12.7
Total inventories [(a)]	$ 189.1	$ 157.3

(a) Amounts at September 30, 2019 include inventories acquired in the MRL acquisition - see Note 2 – Acquisitions.

NOTE 6 – GOODWILL AND OTHER INTANGIBLE ASSETS

The following table summarizes the carrying amount of goodwill, and the changes in the carrying amount of goodwill in the nine months ended September 30, 2019, by segment:

(in millions)	Environmental Solutions	Safety & Security Systems	Total
Balance at January 1, 2019	$ 263.2	$ 111.9	$ 375.1
Translation adjustments	0.1	(1.6)	(1.5)
Acquisitions	18.5	—	18.5
Balance at September 30, 2019	$ 281.8	$ 110.3	$ 392.1

The following table summarizes the gross carrying amount and accumulated amortization of intangible assets for each major class of intangible assets:

	September 30, 2019			December 31, 2018		
(in millions)	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
Definite-lived intangible assets:						
Customer relationships [(a)]	$ 108.6	$ (18.2)	$ 90.4	$ 90.9	$ (12.1)	$ 78.8
Other [(a)]	4.2	(1.5)	2.7	2.9	(1.3)	1.6
Total definite-lived intangible assets	112.8	(19.7)	93.1	93.8	(13.4)	80.4
Indefinite-lived intangible assets:						
Trade names	72.0	—	72.0	62.7	—	62.7
Total indefinite-lived intangible assets	72.0	—	72.0	62.7	—	62.7
Total intangible assets	$ 184.8	$ (19.7)	$ 165.1	$ 156.5	$ (13.4)	$ 143.1

(a) Average useful life of customer relationships and other definite-lived intangible assets are estimated to be approximately 12 years and eight years, respectively. The average useful life across all definite-lived intangible assets is estimated to be approximately 12 years.

The table above includes preliminary estimates of the fair value and useful lives of certain definite and indefinite-lived intangible assets related to the MRL acquisition completed during 2019. As further described in Note 2 – Acquisitions, the preliminary measurements of fair value included in the table above are subject to change during the measurement period as valuations are finalized.

Amortization expense for the three months ended September 30, 2019 and 2018 was $2.4 million and $2.0 million, respectively. Amortization expense for the nine months ended September 30, 2019 and 2018 was $6.4 million and $6.1 million, respectively.

The Company currently estimates that aggregate amortization expense will be approximately $2.4 million for the remainder of 2019, $9.6 million in 2020, $9.6 million in 2021, $9.5 million in 2022, $9.3 million in 2023, and $52.7 million thereafter. Actual amounts of amortization may differ from estimated amounts due to additional intangible asset acquisitions, changes in foreign currency rates, measurement period adjustments for the MRL acquisition, impairment of intangible assets and other events.

NOTE 7 – DEBT

The following table summarizes the components of Long-term borrowings and finance lease obligations:

(in millions)	September 30, 2019	December 31, 2018
Amended 2016 Credit Agreement [a]	$ —	$ 209.4
2019 Credit Agreement	248.7	—
Finance lease obligations	0.6	0.7
Total long-term borrowings and finance lease obligations, including current portion	249.3	210.1
Less: Current finance lease obligations	0.2	0.2
Total long-term borrowings and finance lease obligations	$ 249.1	$ 209.9

(a) Defined as the Amended and Restated Credit Agreement, dated January 27, 2016, as amended on June 2, 2017.

As more fully described within Note 14 – Fair Value Measurements, the Company uses a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. The fair value of long-term debt is based on interest rates that we believe are currently available to us for issuance of debt with similar terms and remaining maturities (Level 2 input).

The following table summarizes the carrying amounts and estimated fair values of the Company's long-term borrowings:

	September 30, 2019		December 31, 2018	
(in millions)	Notional Amount	Fair Value	Notional Amount	Fair Value
Long-term borrowings [a]	$ 249.3	$ 249.3	$ 210.1	$ 210.1

(a) Long-term borrowings includes current portions of long-term debt and current portions of finance lease obligations of $0.2 million and $0.2 million as of September 30, 2019 and December 31, 2018, respectively.

On July 30, 2019, the Company entered into the Second Amended and Restated Credit Agreement (the "2019 Credit Agreement"), by and among the Company (the "U.S. Borrower") and certain of its foreign subsidiaries (collectively, the "Borrowers"), Wells Fargo Bank, National Association, as administrative agent, swingline lender and issuing lender, JPMorgan Chase Bank, N.A. as syndication agent, and the other lenders and parties signatory thereto. The 2019 Credit Agreement amends and restates the Company's Amended 2016 Credit Agreement.

The 2019 Credit Agreement is a $500 million revolving credit facility, maturing on July 30, 2024, that provides for borrowings in the form of loans or letters of credit up to the aggregate availability under the facility, with a sub-limit of $75 million for letters of credit. The 2019 Credit Agreement allows for the Borrowers to borrow in denominations of U.S. Dollars, Canadian Dollars, Euros or British Pounds (with borrowings in non-U.S. currencies subject to a sublimit of $200 million). In addition, the Company may cause the commitments to increase by up to an additional $250 million, subject to the approval of the applicable lenders providing such additional financing. Borrowings under the 2019 Credit Agreement may be used for working capital and general corporate purposes, including acquisitions.

The Company's material domestic subsidiaries provide guarantees for all obligations of the Borrowers under the 2019 Credit Agreement, which is secured by a first priority security interest in (i) all existing or hereafter acquired domestic property and assets of the U.S. Borrower and material domestic subsidiaries, (ii) the stock or other equity interests in each of the material domestic subsidiaries and (iii) 65% of outstanding voting capital stock of certain first-tier foreign subsidiaries, subject to certain exclusions.

Borrowings under the 2019 Credit Agreement bear interest, at the Company's option, at a base rate or a LIBOR rate, plus, in each case, an applicable margin. The applicable margin ranges from zero to 0.75% for base rate borrowings and 1.00% to 1.75% for LIBOR borrowings. The Company must also pay a commitment fee to the lenders ranging between 0.10% to 0.25% per annum on the unused portion of the $500 million revolving credit facility along with other standard fees. Letter of credit fees are payable on outstanding letters of credit in an amount equal to the applicable LIBOR margin plus other customary fees.

The Company is subject to certain net leverage ratio and interest coverage ratio financial covenants under the 2019 Credit Agreement that are to be measured at each fiscal quarter-end. The Company was in compliance with all such covenants as of September 30, 2019. The 2019 Credit Agreement also includes a series of "covenant holiday" periods, which allow for the temporary increase of the minimum net leverage ratio following the completion of a permitted acquisition, or a series of acquisitions, when the aggregate consideration over a period of twelve months exceeds $75 million. In addition, the 2019 Credit Agreement includes customary negative covenants, subject to certain exceptions, restricting or limiting the Company's and its subsidiaries' ability to, among other things: (i) make non-ordinary course dispositions of assets; (ii) make certain fundamental business changes, such as mergers, consolidations or any similar combination; (iii) make restricted payments, including dividends and stock repurchases; (iv) incur indebtedness; (v) make certain loans and investments; (vi) create liens; (vii) transact with affiliates; (viii) enter into sale/leaseback transactions; (ix) make negative pledges; and (x) modify subordinated debt documents.

Under the 2019 Credit Agreement, restricted payments, including dividends and stock repurchases, shall be permitted if (i) the Company's leverage ratio is less than or equal to 3.25; (ii) the Company is in compliance with all other financial covenants; and (iii) there are no existing defaults under the 2019 Credit Agreement. If its leverage ratio is more than 3.25, the Company is still permitted to fund (i) up to $35 million of dividend payments and stock repurchases; and (ii) an incremental $50 million of other cash payments.

The 2019 Credit Agreement contains customary events of default. If an event of default occurs and is continuing, the Borrowers may be required immediately to repay all amounts outstanding under the 2019 Credit Agreement and the commitments from the lenders may be terminated.

In connection with the execution of the 2019 Credit Agreement, the Company incurred $1.0 million of debt issuance costs. Such fees have been deferred and are being amortized over the five-year term.

As of September 30, 2019, there was $248.7 million of cash drawn and $11.3 million of undrawn letters of credit under the 2019 Credit Agreement, with $240.0 million of net availability for borrowings. As of December 31, 2018, there was $209.4 million cash drawn and $11.3 million of undrawn letters of credit under the Amended 2016 Credit Agreement, with $179.3 million of net availability for borrowings.

For the nine months ended September 30, 2019, gross borrowings under the Company's credit facilities were $80.1 million and there were $42.6 million of gross payments. For the nine months ended September 30, 2018, gross borrowings and gross payments were $8.0 million and $61.6 million, respectively.

Interest Rate Swap

On June 2, 2017, the Company entered into an interest rate swap (the "2017 Swap") with a notional amount of $150.0 million, as a means of fixing the floating interest rate component on $150.0 million of its variable-rate debt. In the third quarter of 2019, the Company terminated the 2017 Swap and received $0.2 million in connection with its settlement. The 2017 Swap was previously designated as a cash flow hedge, with an original termination date of June 2, 2020. As a result of the application of hedge accounting treatment, all unrealized gains and losses related to the derivative instrument are recorded in Accumulated other comprehensive loss and are reclassified into operations in the same period in which the hedged transaction affects earnings. The gain of $0.2 million has been included in Accumulated other comprehensive loss and will be reclassified into earnings ratably through June 2, 2020. Hedge effectiveness is assessed quarterly. We do not use derivative instruments for trading or speculative purposes.

At December 31, 2018, the fair value of the 2017 Swap, derived from a discounted cash flow analysis based on the terms of the contract and the interest rate curve (Level 2 inputs) and included in Prepaid expenses and other current assets on the Condensed Consolidated Balance Sheet, was $2.0 million. During the three and nine months ended September 30, 2019, unrealized pre-tax losses of $0.2 million and $1.8 million, respectively, were recorded in Accumulated other comprehensive loss. During the three and nine months ended September 30, 2018, unrealized pre-tax gains of $0.1 million and $1.4 million, respectively, were recorded in Accumulated other comprehensive loss.

On October 2, 2019, the Company entered into an interest rate swap with a notional amount of $75.0 million, as a means of fixing the floating interest rate component on $75.0 million of its variable-rate debt. The interest rate swap is designated as a cash flow hedge, with a maturity date of July 30, 2024.

NOTE 8 – INCOME TAXES

The Company recognized income tax expense of $7.9 million and $6.5 million for the three months ended September 30, 2019 and 2018, respectively. The increase in tax expense in the current-year quarter was largely due to higher pre-tax income levels, which was partially offset by the recognition of a $0.6 million benefit resulting from the completion of a tax audit and a $0.6 million excess tax benefit from stock compensation activity. The Company's effective tax rate for the three months ended September 30, 2019 was 21.8%, compared to 23.0% in the prior-year quarter.

For the nine months ended September 30, 2019 and 2018, the Company recognized income tax expense of $25.4 million and $18.9 million, respectively. The increase in tax expense in the current year was largely due to higher pre-tax income levels. The Company's effective tax rate for the nine months ended September 30, 2019 was 24.4%, compared to 23.5% in the prior-year period.

NOTE 9 – PENSIONS

The following table summarizes the components of net periodic pension expense (benefit):

	U.S. Benefit Plan				Non-U.S. Benefit Plan			
	Three Months Ended September 30,		Nine Months Ended September 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
(in millions)	2019	2018	2019	2018	2019	2018	2019	2018
Service cost	$ —	$ —	$ —	$ —	$ —	$ —	$ 0.1	$ 0.1
Interest cost	1.7	1.6	5.1	4.8	0.3	0.3	1.0	1.0
Amortization of actuarial loss	0.8	0.8	2.0	2.3	0.2	0.2	0.5	0.5
Amortization of prior service cost	—	—	—	—	—	—	0.1	—
Expected return on plan assets	(2.1)	(2.2)	(6.5)	(6.6)	(0.5)	(0.5)	(1.5)	(1.7)
Net periodic pension expense (benefit)	$ 0.4	$ 0.2	$ 0.6	$ 0.5	$ —	$ —	$ 0.2	$ (0.1)

NOTE 10 – COMMITMENTS AND CONTINGENCIES

Financial Commitments

The Company provides indemnifications and other guarantees in the ordinary course of business, the terms of which range in duration and often are not explicitly defined. Specifically, the Company is occasionally required to provide letters of credit and bid and performance bonds to various customers, principally to act as security for retention levels related to casualty insurance policies and to guarantee the performance of subsidiaries that engage in export and domestic transactions. At September 30, 2019, the Company had outstanding performance and financial standby letters of credit, as well as outstanding bid and performance bonds, aggregating to $19.2 million. If any such letters of credit or bonds are called, the Company would be obligated to reimburse the issuer of the letter of credit or bond. The Company believes the likelihood of any currently outstanding letter of credit or bond being called is remote.

The Company has transactions involving the sale of equipment to certain of its customers which include (i) guarantees to repurchase the equipment for a fixed price at a future date and (ii) guarantees to repurchase the equipment from the third-party lender in the event of default by the customer. As of September 30, 2019, the single year and maximum potential cash payments the Company could be required to make to repurchase equipment under these agreements were $3.5 million and $3.9 million, respectively. The Company's risk under these repurchase arrangements would be partially mitigated by the value of the products repurchased as part of the transaction. Historical cash requirements and losses associated with these obligations have not been significant, but could increase if customer defaults exceed current expectations.

Product Warranties

The Company issues product performance warranties to customers with the sale of its products. The specific terms and conditions of these warranties vary depending upon the product sold and country in which the Company does business, with warranty periods generally ranging from one to five years. The Company estimates the costs that may be incurred under its basic limited warranty and records a liability in the amount of such costs at the time the sale of the related product is recognized. Factors that affect the Company's warranty liability include (i) the number of units under warranty, (ii) historical and anticipated rates of warranty claims and (iii) costs per claim. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary.

The following table summarizes the changes in the Company's warranty liabilities during the nine months ended September 30, 2019 and 2018:

(in millions)	2019	2018
Balance at January 1	$ 9.8	$ 8.4
Provisions to expense	4.9	5.3
Acquisitions	0.2	—
Payments	(4.8)	(4.8)
Balance at September 30	$ 10.1	$ 8.9

As of September 30, 2019 and December 31, 2018, an estimated liability was recorded within the Environmental Solutions Group in connection with a specific warranty matter. It is reasonably possible that the Company's estimate may change in the future as more information becomes available; however, the ultimate resolution of this matter is not expected to have a material adverse effect on the Company's results of operations, financial position or liquidity.

Liabilities of Discontinued Operations

The Company retains certain liabilities for operations discontinued in prior periods, primarily for environmental remediation and product liability. Included in liabilities of discontinued operations on the Condensed Consolidated Balance Sheets as of September 30, 2019 and December 31, 2018, were reserves of $0.2 million and $0.4 million, respectively, related to environmental remediation at the Pearland, Texas facility previously used by the Company's discontinued Pauluhn business, and $1.1 million and $1.1 million, respectively, related to estimated product liability obligations of the discontinued North American refuse truck body business.

Legal Proceedings

The Company is subject to various claims, including pending and possible legal actions for product liability and other damages, and other matters arising in the ordinary course of the Company's business. On a quarterly basis, the Company reviews uninsured material legal claims against the Company and accrues for the costs of such claims as appropriate in the exercise of management's best judgment and experience. However, due to a lack of factual information available to the Company about a claim, or the procedural stage of a claim, it may not be possible for the Company to reasonably assess either the probability of a favorable or unfavorable outcome of the claim or to reasonably estimate the amount of loss should there be an unfavorable outcome. Therefore, for many claims, the Company cannot reasonably estimate a range of loss.

The Company believes, based on current knowledge and after consultation with counsel, that the outcome of such claims and actions will not have a material adverse effect on the Company's results of operations or financial condition. However, in the event of unexpected future developments, it is possible that the ultimate resolution of such matters, if unfavorable, could have a material adverse effect on the Company's results of operations, financial condition or cash flow.

Hearing Loss Litigation

The Company has been sued for monetary damages by firefighters who claim that exposure to the Company's sirens has impaired their hearing and that the sirens are therefore defective. There were 33 cases filed during the period of 1999 through 2004, involving a total of 2,443 plaintiffs, in the Circuit Court of Cook County, Illinois. These cases involved more than 1,800 firefighter plaintiffs from locations outside of Chicago. In 2009, six additional cases were filed in Cook County, involving 299 Pennsylvania firefighter plaintiffs. During 2013, another case was filed in Cook County involving 74 Pennsylvania firefighter plaintiffs.

The trial of the first 27 of these plaintiffs' claims occurred in 2008, whereby a Cook County jury returned a unanimous verdict in favor of the Company.

An additional 40 Chicago firefighter plaintiffs were selected for trial in 2009. Plaintiffs' counsel later moved to reduce the number of plaintiffs from 40 to nine. The trial for these nine plaintiffs concluded with a verdict against the Company and for the plaintiffs in varying amounts totaling $0.4 million. The Company appealed this verdict. On September 13, 2012, the Illinois Appellate Court rejected this appeal. The Company thereafter filed a petition for rehearing with the Illinois Appellate Court, which was denied on February 7, 2013. The Company sought further review by filing a petition for leave to appeal with the Illinois Supreme Court on March 14, 2013. On May 29, 2013, the Illinois Supreme Court issued a summary order declining to accept review of this case. On July 1, 2013, the Company satisfied the judgments entered for these plaintiffs, which resulted in final dismissal of these cases.

A third consolidated trial involving eight Chicago firefighter plaintiffs occurred during November 2011. The jury returned a unanimous verdict in favor of the Company at the conclusion of this trial.

Following this trial, on March 12, 2012 the trial court entered an order certifying a class of the remaining Chicago Fire Department firefighter plaintiffs for trial on the sole issue of whether the Company's sirens were defective and unreasonably dangerous. The Company petitioned the Illinois Appellate Court for interlocutory appeal of this ruling. On May 17, 2012, the Illinois Appellate Court accepted the Company's petition. On June 8, 2012, plaintiffs moved to dismiss the appeal, agreeing with the Company that the trial court had erred in certifying a class action trial in this matter. Pursuant to plaintiffs' motion, the Illinois Appellate Court reversed the trial court's certification order.

Thereafter, the trial court scheduled a fourth consolidated trial involving three firefighter plaintiffs, which began in December 2012. Prior to the start of this trial, the claims of two of the three firefighter plaintiffs were dismissed. On December 17, 2012, the jury entered a complete defense verdict for the Company.

Following this defense verdict, plaintiffs again moved to certify a class of Chicago Fire Department plaintiffs for trial on the sole issue of whether the Company's sirens were defective and unreasonably dangerous. Over the Company's objection, the trial court granted plaintiffs' motion for class certification on March 11, 2013 and scheduled a class action trial to begin on June 10, 2013. The Company filed a petition for review with the Illinois Appellate Court on March 29, 2013 seeking reversal of the class certification order.

On June 25, 2014, a unanimous three-judge panel of the First District Illinois Appellate Court issued its opinion reversing the class certification order of the trial court. Specifically, the Appellate Court determined that the trial court's ruling failed to satisfy the class-action requirements that the common issues of the firefighters' claims predominate over the individual issues and that there is an adequate representative for the class. During a status hearing on October 8, 2014, plaintiffs represented to the Court that they would again seek to certify a class of firefighters on the issue of whether the Company's sirens were defective and unreasonably dangerous. On January 12, 2015, plaintiffs filed motions to amend their complaints to add class action allegations with respect to Chicago firefighter plaintiffs, as well as the approximately 1,800 firefighter plaintiffs from locations outside of Chicago. On March 11, 2015, the trial court granted plaintiff's motions to amend their complaints. On April 24, 2015, the cases were transferred to Cook County chancery court, which will decide all class certification issues. On March 23, 2018, plaintiffs filed a motion to certify as a class all firefighters from the Chicago Fire Department who have filed lawsuits in this matter. The Company has served discovery upon plaintiffs related to this motion and intends to continue its objections to any attempt at certification. The court has ordered plaintiffs to respond to the Company's discovery. A further status hearing has been scheduled for November 19, 2019.

The Company has also filed motions to dismiss cases involving firefighters who worked for fire departments located outside of the State of Illinois based on improper venue. On February 24, 2017, the Circuit Court of Cook County entered orders dismissing the cases of 1,770 such firefighter plaintiffs from the jurisdiction of the State of Illinois. Pursuant to these orders, these plaintiffs had six months thereafter to refile their cases in jurisdictions where these firefighters are located. Prior to this six-month deadline, attorneys representing some of these plaintiffs contacted the Company regarding possible settlement of their cases. During the year ended December 31, 2017, the Company entered into a global settlement agreement with two attorneys who represented approximately 1,090 of these plaintiffs. Under the terms of the settlement agreement, the Company offered $700 per plaintiff to settle these cases and 717 plaintiffs accepted this offer as a final settlement. The attorneys representing these plaintiffs agreed to withdraw from representing plaintiffs who did not respond to the settlement offer. It is the Company's position that the non-settling plaintiffs who failed to timely refile their cases following the February 2017 dismissal by the Circuit Court of Cook County are now barred from doing so by the statute of limitations. The Company filed a venue motion seeking to transfer to DuPage County cases involving 10 plaintiffs who reside and work in Illinois but outside of Cook

County. The Court granted this motion on June 28, 2017.

The Company has also been sued on this issue outside of the Cook County, Illinois venue. Between 2007 and 2009, a total of 71 lawsuits involving 71 plaintiffs were filed in the Court of Common Pleas, Philadelphia County, Pennsylvania. Three of these cases were dismissed pursuant to pretrial motions filed by the Company. Another case was voluntarily dismissed. Prior to trial in four cases, the Company paid nominal sums to obtain dismissals.

Three trials occurred in Philadelphia involving these cases filed in 2007 through 2009. The first trial involving one of these plaintiffs occurred in 2010, when the jury returned a verdict for the plaintiff. In particular, the jury found that the Company's siren was not defectively designed, but that the Company negligently constructed the siren. The jury awarded damages in the amount of $0.1 million, which was subsequently reduced to $0.08 million. The Company appealed this verdict. Another trial, involving nine Philadelphia firefighter plaintiffs, also occurred in 2010 when the jury returned a defense verdict for the Company as to all claims and all plaintiffs involved in that trial. The third trial, also involving nine Philadelphia firefighter plaintiffs, was completed during 2010 when the jury returned a defense verdict for the Company as to all claims and all plaintiffs involved in that trial.

Following defense verdicts in the last two Philadelphia trials, the Company negotiated settlements with respect to all remaining filed cases in Philadelphia at that time, as well as other firefighter claimants represented by the attorney who filed the Philadelphia cases. On January 4, 2011, the Company entered into a Global Settlement Agreement (the "Settlement Agreement") with the law firm of the attorney representing the Philadelphia claimants, on behalf of 1,125 claimants the firm represented (the "Claimants") and who had asserted product claims against the Company (the "Claims"). Three hundred eight of the Claimants had lawsuits pending against the Company in Cook County, Illinois.

The Settlement Agreement provided that the Company pay a total amount of $3.8 million (the "Settlement Payment") to settle the Claims (including the costs, fees and other expenses of the law firm in connection with its representation of the Claimants), subject to certain terms, conditions and procedures set forth in the Settlement Agreement. In order for the Company to be required to make the Settlement Payment: (i) each Claimant who agreed to settle his or her claims had to sign a release acceptable to the Company (a "Release"), (ii) each Claimant who agreed to the settlement and who was a plaintiff in a lawsuit, had to dismiss his or her lawsuit with prejudice, (iii) by April 29, 2011, at least 93% of the Claimants identified in the Settlement Agreement must have agreed to settle their claims and provide a signed Release to the Company and (iv) the law firm had to withdraw from representing any Claimants who did not agree to the settlement, including those who filed lawsuits. If the conditions to the settlement were met, but less than 100% of the Claimants agreed to settle their Claims and sign a Release, the Settlement Payment would be reduced by the percentage of Claimants who did not agree to the settlement.

On April 22, 2011, the Company confirmed that the terms and conditions of the Settlement Agreement had been met and made a payment of $3.6 million to conclude the settlement. The amount was based upon the Company's receipt of 1,069 signed releases provided by Claimants, which was 95% of all Claimants identified in the Settlement Agreement.

The Company generally denies the allegations made in the claims and lawsuits by the Claimants and denies that its products caused any injuries to the Claimants. Nonetheless, the Company entered into the Settlement Agreement for the purpose of minimizing its expenses, including legal fees, and avoiding the inconvenience, uncertainty and distraction of the claims and lawsuits.

During April through October 2012, 20 new cases were filed in the Court of Common Pleas, Philadelphia County, Pennsylvania. These cases were filed on behalf of 20 Philadelphia firefighters and involve various defendants in addition to the Company. Five of these cases were subsequently dismissed. The first trial involving these 2012 Philadelphia cases occurred during December 2014 and involved three firefighter plaintiffs. The jury returned a verdict in favor of the Company. Following this trial, all of the parties agreed to settle cases involving seven firefighter plaintiffs set for trial during January 2015 for nominal amounts per plaintiff.

In January 2015, plaintiffs' attorneys filed two new complaints in the Court of Common Pleas, Philadelphia, Pennsylvania on behalf of approximately 70 additional firefighter plaintiffs. The vast majority of the firefighters identified in these complaints are located outside of Pennsylvania. One of the complaints in these cases, which involves 11 firefighter plaintiffs from the District of Columbia, was removed to federal court in the Eastern District of Pennsylvania. Plaintiffs voluntarily dismissed all claims in this case on May 31, 2016. The Company thereafter moved to recover various fees and costs in this case, asserting that plaintiffs' counsel failed to properly investigate these claims prior to filing suit. The Court granted this motion on April 25, 2017, awarding $0.1 million to the Company. After plaintiffs appealed this Order, the United States Court of Appeals for the Third Circuit affirmed the lower court decision awarding fees and costs to the Company.

With respect to claims of other out-of-state firefighters involved in these two cases, the Company moved to dismiss these claims as improperly filed in Pennsylvania. The Court granted this motion and dismissed these claims on November 5, 2015. During August through December 2015, another nine new cases were filed in the Court of Common Pleas, Philadelphia County, Pennsylvania. These cases involve a total of 193 firefighters, most of whom are located outside of Pennsylvania. The Company again moved to dismiss all claims filed by out-of-state firefighters in these cases as improperly filed in Pennsylvania. On May 24, 2016, the Court granted this motion and dismissed these claims. Plaintiffs appealed this decision and, on September 25, 2018, the appellate court reversed this dismissal. The Company has filed a petition with the appellate court requesting that the court reconsider its ruling. On December 7, 2018, the appellate court granted the Company's petition and withdrew its prior decision. The Court has ordered that the parties file additional briefs and a new panel of appellate judges issue a decision. The parties have supplied briefs to the Court and the oral argument on this case has been scheduled.

On May 13, 2016, four new cases were filed in Philadelphia state court, involving a total of 55 Philadelphia firefighters who live in Pennsylvania. During August 2016, the Company settled a case involving four Philadelphia firefighters that had been set for trial in Philadelphia state court during September 2016. During 2017, plaintiffs filed additional cases in the Court of Common Pleas, Philadelphia County, involving over 100 Philadelphia firefighter plaintiffs. During January 2017, plaintiffs filed a motion to consolidate and bifurcate, similar to a motion filed in the Pittsburgh hearing loss cases, as described below. The Company has filed an opposition to this motion. These cases were then transferred to the mass tort program in Philadelphia for pretrial purposes. Plaintiffs' counsel thereafter dismissed several plaintiffs. During November 2017, a trial involving one Philadelphia firefighter occurred. The jury returned a verdict in favor of the Company in this trial. Prior to a dismissal of these cases pursuant to the Tolling Agreement, discussed below, there was a total of 75 firefighters involved in cases pending in the Philadelphia mass tort program.

During April through July 2013, additional cases were filed in Allegheny County, Pennsylvania on behalf of 247 plaintiff firefighters from Pittsburgh and against various defendants, including the Company. During May 2016, two additional cases were filed against the Company in Allegheny County involving 19 Pittsburgh firefighters. After the Company filed pretrial motions, the Court dismissed claims of 55 Pittsburgh firefighter plaintiffs. The Court scheduled trials for May, September and November 2016, for eight firefighters per trial. Prior to the first scheduled trial in Pittsburgh, the Court granted the Company's motion for summary judgment and dismissed all claims asserted by plaintiff firefighters involved in this trial. Following an appeal by the plaintiff firefighters, the appellate court affirmed this dismissal. The next trial for six Pittsburgh firefighters started on November 7, 2016. Shortly after this trial began, plaintiffs' counsel moved for a mistrial because a key witness suddenly became unavailable. The Court granted this motion and rescheduled this trial for March 6, 2017. During January 2017, plaintiffs also moved to consolidate and bifurcate trials involving Pittsburgh firefighters. In particular, plaintiffs sought one trial involving liability issues which will apply to all Pittsburgh firefighters who filed suit against the Company. The Company filed an opposition to this motion. On April 18, 2017, the trial court granted plaintiffs' motion to bifurcate the next Pittsburgh trial. Pursuant to a motion for clarification filed by the Company, the Court ruled that the bifurcation order would only apply to six plaintiffs who were part of the next trial group in Pittsburgh. The Company thereafter sought an interlocutory appeal of the Court's bifurcation order. The appellate court declined to accept the appeal at that time. A bifurcated trial began on September 27, 2017 in Allegheny County, Pennsylvania. Prior to and during trial, two plaintiffs were dismissed, resulting in four plaintiffs remaining for trial. After approximately two weeks of trial, the jury found that the Company's siren product was not defective or unreasonably dangerous and rendered a verdict in favor of the Company.

A second trial involving Pittsburgh firefighters began during January 2018. At the outset of this trial, plaintiffs' attorneys requested that the Company consider settlement of various cases. This trial was continued to allow the parties to further discuss possible settlement. During March 2018, the parties agreed in principle on a framework (the "Settlement Framework") to resolve hearing loss claims and cases in all jurisdictions involved in the hearing loss litigation except in Cook County and Lackawanna County, and excluding one case involving one firefighter in New York City. The firefighters excluded from the Settlement Framework are represented by different attorneys. The Company has agreed in principle to settle the cases in Lackawanna County and the case involving one firefighter in New York City for nominal amounts. Pursuant to the Settlement Framework, the Company would pay $700 to each firefighter who has filed a lawsuit and is eligible to be part of the settlement. The Company would pay $300 to each firefighter who has not yet filed a case and is eligible to be part of the settlement. To be eligible for settlement, among other things, firefighters must provide proof that they have high frequency noise-induced hearing loss. There are approximately 3,700 firefighters whose claims may be considered as part of this settlement, including approximately 1,320 firefighters who have ongoing filed lawsuits. The parties are in the process of determining how many of these firefighters will be eligible to participate in the settlement. In order to minimize the parties' respective legal costs and expenses during this settlement process, on July 5, 2018, the parties entered into a tolling agreement (the "Tolling Agreement"). Pursuant to the Tolling Agreement, counsel for the settling firefighters agreed to dismiss the pending lawsuits in all jurisdictions except for the Allegheny County (Pittsburgh), Pennsylvania cases, and the Company agreed to a tolling of any statute of limitations applicable to the dismissed cases until November 4, 2019. The Settlement Framework will require plaintiffs' attorneys to withdraw from representing firefighters who elect not to participate in this settlement. As of September 30, 2019, the Company has recognized an estimated liability for the potential settlement amount. While it is reasonably possible that the ultimate resolution of this matter may result in a loss in excess of the amount accrued, the incremental loss is not expected to be material.

During March 2014, an action also was brought in the Court of Common Pleas of Erie County, Pennsylvania on behalf of 61 firefighters. This case likewise involves various defendants in addition to the Company. After the Company filed pretrial motions, 33 Erie County firefighter plaintiffs voluntarily dismissed their claims. During August 2017, five cases involving 70 firefighter plaintiffs were filed in Lackawanna County, Pennsylvania. These cases involve firefighter plaintiffs who originally filed in Cook County and were dismissed pursuant to the Company's forum nonconveniens motion. As of September 30, 2019, a total of 263 firefighters are involved in cases filed in Allegheny and Lackawanna counties in Pennsylvania.

On September 17, 2014, 20 lawsuits, involving a total of 193 Buffalo Fire Department firefighters, were filed in the Supreme Court of the State of New York, Erie County. All of the cases filed in Erie County, New York have been removed to federal court in the Western District of New York. Plaintiffs have filed a motion to consolidate and bifurcate these cases, similar to the motion filed in the Pittsburgh hearing loss cases, as described above. The Company has filed an opposition to the motion. During February 2015, a lawsuit involving one New York City firefighter plaintiff was filed in the Supreme Court of the State of New York, New York County. The plaintiff named the Company as well as several other parties as defendants. That case subsequently was transferred to federal court in the Northern District of New York and thereafter dismissed. During April 2015 through January 2016, 29 new cases involving a total of 235 firefighters were filed in various counties in the New York City area. During December 2016 through October 2017, additional cases were filed in these jurisdictions. On February 5, 2018, the Company was served with a complaint in an additional case filed in Kings County, New York. This case involves one plaintiff. Prior to a dismissal of these cases pursuant to the Tolling Agreement, there was a total of 536 firefighters involved in cases filed in the State of New York.

During November 2015, the Company was served with a complaint filed in Union County, New Jersey state court, involving 34 New Jersey firefighters. This case has been transferred to federal court in the District of New Jersey. During the period from January through May 2016, eight additional cases were filed in various New Jersey state courts. Most of the firefighters in these cases reside in New Jersey and work or worked at New Jersey fire departments. During December 2016, a case involving one New Jersey firefighter was filed in the United States District Court of New Jersey. On May 2, 2017, plaintiffs filed a motion to consolidate and bifurcate in the pending federal court case in New Jersey. This motion was similar to bifurcation motions filed by plaintiffs in Pittsburgh, Buffalo and Philadelphia. The Court has denied this motion as premature. Pursuant to a petition filed by both parties, all New Jersey state court cases were consolidated for pretrial purposes. Prior to a dismissal of these cases pursuant to the Tolling Agreement, there was a total of 61 firefighters involved in cases filed in New Jersey.

During May through October 2016, nine cases were filed in Suffolk County, Massachusetts state court, naming the Company as a defendant. These cases involve 194 firefighters who lived and worked in the Boston area. During August 2017, plaintiffs filed additional cases in Suffolk County court. The Company moved to transfer various cases filed in Suffolk County to other counties in Massachusetts where plaintiffs reside and work. Prior to a dismissal of these cases pursuant to the Tolling Agreement, there was a total of 218 firefighters involved in cases filed in Massachusetts.

During August and September 2017, plaintiffs' attorneys filed additional hearing loss cases in Florida. The Company is the only named defendant. These cases were filed in several different counties in Florida, including Tampa, Miami and Orlando municipalities. Plaintiffs have agreed to stipulate that they will not seek more than $75,000 in damages in any individual plaintiff case. Prior to a dismissal of these cases pursuant to the Tolling Agreement, there was a total of 166 firefighters involved in cases filed in Florida.

From 2007 through 2009, firefighters also brought hearing loss claims against the Company in New Jersey, Missouri, Maryland and Kings County, New York. All of those cases, however, were dismissed prior to trial, including four cases in the Supreme Court of Kings County, New York that were dismissed upon the Company's motion in 2008. On appeal, the New York appellate court affirmed the trial court's dismissal of these cases. Plaintiffs' attorneys have threatened to file additional lawsuits. The Company intends to vigorously defend all of these lawsuits, if filed.

NOTE 11 – EARNINGS PER SHARE

The Company computes earnings per share ("EPS") in accordance with ASC 260, *Earnings per Share*, which requires that non-vested restricted stock containing non-forfeitable dividend rights should be treated as participating securities pursuant to the two-class method. Under the two-class method, net income is reduced by the amount of dividends declared in the period for common stock and participating securities. The remaining undistributed earnings are then allocated to common stock and participating securities as if all of the net income for the period had been distributed. The amounts of distributed and undistributed earnings allocated to participating securities for the three and nine months ended September 30, 2019 and 2018 were insignificant and did not materially impact the calculation of basic or diluted EPS.

Basic EPS is computed by dividing income available to common stockholders by the weighted average number of shares of common stock and non-vested restricted stock awards outstanding for the period.

Diluted EPS is computed using the weighted average number of shares of common stock and non-vested restricted stock awards outstanding for the year, plus the effect of dilutive potential common shares outstanding during the period. The dilutive effect of common stock equivalents is determined using the more dilutive of the two-class method or alternative methods. The Company uses the treasury stock method to determine the potentially dilutive impact of our employee stock options and restricted stock units, and the contingently issuable method for our performance-based restricted stock unit awards.

For the three and nine months ended September 30, 2019, options to purchase 0.2 million and 0.5 million shares of the Company's common stock, respectively, had an anti-dilutive effect on EPS, and accordingly, are excluded from the calculation of diluted EPS. For both the three and nine months ended September 30, 2018, options to purchase 0.3 million shares of the Company's common stock had an anti-dilutive effect on EPS, and accordingly, are excluded from the calculation of diluted EPS.

The following table reconciles Net income to basic and diluted EPS:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(in millions, except per share data)	**2019**	**2018**	**2019**	**2018**
Net income	$ 28.4	$ 21.7	$ 78.7	$ 61.5
Weighted average shares outstanding – Basic	60.2	60.0	60.1	59.9
Dilutive effect of common stock equivalents	1.2	1.1	1.2	1.1
Weighted average shares outstanding – Diluted	61.4	61.1	61.3	61.0
Earnings per share:				
Basic	$ 0.47	$ 0.36	$ 1.31	$ 1.03
Diluted	0.46	0.36	1.28	1.01

NOTE 12 – STOCKHOLDERS' EQUITY

Dividends

On February 19, 2019, the Company's Board of Directors (the "Board") declared a quarterly cash dividend of $0.08 per common share. The dividend totaled $4.8 million and was distributed on March 29, 2019 to holders of record at the close of business on March 18, 2019.

On April 30, 2019, the Board declared a quarterly cash dividend of $0.08 per common share. The dividend totaled $4.8 million and was distributed on May 30, 2019 to holders of record at the close of business on May 15, 2019.

On July 30, 2019, the Board declared a quarterly cash dividend of $0.08 per common share. The dividend totaled $4.9 million and was distributed on August 28, 2019 to holders of record at the close of business on August 14, 2019.

During the three and nine months ended September 30, 2018, dividends of $4.8 million and $13.8 million, respectively, were paid to stockholders.

On October 29, 2019, the Board declared a quarterly cash dividend of $0.08 per common share payable on November 26, 2019 to holders of record at the close of business on November 13, 2019.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — (CONTINUED)
(Unaudited)

Stock Repurchase Program

In November 2014, the Board authorized a stock repurchase program of up to $75.0 million of the Company's common stock. The stock repurchase program is intended primarily to facilitate opportunistic purchases of Company stock as a means to provide cash returns to stockholders, enhance stockholder returns and manage the Company's capital structure. Under the stock repurchase program, the Company is authorized to repurchase, from time to time, shares of its outstanding common stock in the open market or through privately negotiated transactions. Stock repurchases by the Company are subject to market conditions and other factors and may be commenced, suspended or discontinued at any time.

During the nine months ended September 30, 2019, the Company repurchased 48,409 shares for a total of $1.0 million under the stock repurchase program.

Accumulated Other Comprehensive Loss

The following tables summarize the changes in each component of Accumulated other comprehensive loss, net of tax:

Three Months Ended September 30, 2019 and 2018

(in millions) [a]	Actuarial Losses	Prior Service Costs	Foreign Currency Translation	Unrealized Gain on Derivatives	Total
Balance at July 1, 2019	$ (86.0)	$ (2.4)	$ (8.1)	$ 0.3	$ (96.2)
Other comprehensive income (loss) before reclassifications	0.5	—	(3.8)	0.1	(3.2)
Amounts reclassified from accumulated other comprehensive loss	0.8	—	—	(0.2)	0.6
Net current-period other comprehensive income (loss)	1.3	—	(3.8)	(0.1)	(2.6)
Balance at September 30, 2019	$ (84.7)	$ (2.4)	$ (11.9)	$ 0.2	$ (98.8)

(in millions) [a]	Actuarial Losses	Foreign Currency Translation	Unrealized Gain on Derivatives	Total
Balance at July 1, 2018	$ (73.6)	$ (5.7)	$ 2.0	$ (77.3)
Other comprehensive income (loss) before reclassifications	0.2	(0.4)	0.3	0.1
Amounts reclassified from accumulated other comprehensive loss	0.8	—	(0.2)	0.6
Net current-period other comprehensive income (loss)	1.0	(0.4)	0.1	0.7
Balance at September 30, 2018	$ (72.6)	$ (6.1)	$ 2.1	$ (76.6)

Nine months ended September 30, 2019 and 2018

(in millions) [a]	Actuarial Losses	Prior Service Costs	Foreign Currency Translation	Unrealized Gain on Derivatives	Total
Balance at January 1, 2019	$ (87.4)	$ (2.5)	$ (8.9)	$ 1.5	$ (97.3)
Other comprehensive income (loss) before reclassifications	0.7	—	(3.0)	(0.6)	(2.9)
Amounts reclassified from accumulated other comprehensive loss	2.0	0.1	—	(0.7)	1.4
Net current-period other comprehensive income (loss)	2.7	0.1	(3.0)	(1.3)	(1.5)
Balance at September 30, 2019	$ (84.7)	$ (2.4)	$ (11.9)	$ 0.2	$ (98.8)

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS — (CONTINUED)
(Unaudited)

(in millions) [(a)]	Actuarial Losses	Foreign Currency Translation	Unrealized Gain on Derivatives	Total
Balance at January 1, 2018	$ (75.4)	$ (2.5)	$ 1.0	$ (76.9)
Other comprehensive income (loss) before reclassifications	0.6	(3.6)	1.4	(1.6)
Amounts reclassified from accumulated other comprehensive loss	2.2	—	(0.3)	1.9
Net current-period other comprehensive income (loss)	2.8	(3.6)	1.1	0.3
Balance at September 30, 2018	$ (72.6)	$ (6.1)	$ 2.1	$ (76.6)

(a) Amounts in parentheses indicate losses.

The following table summarizes the amounts reclassified from Accumulated other comprehensive loss, net of tax, in the three months ended September 30, 2019 and 2018 and the affected line item in the Condensed Consolidated Statements of Operations:

Details about Accumulated Other Comprehensive Loss Components	Amount Reclassified from Accumulated Other Comprehensive Loss		Affected Line Item in Condensed Consolidated Statements of Operations
	2019	2018	
(in millions) [(a)]			
Amortization of actuarial losses of defined benefit pension plans	$ (1.0)	$ (1.0)	Other expense, net
Interest rate swap	0.2	0.2	Interest expense
Total before tax	(0.8)	(0.8)	
Income tax benefit	0.2	0.2	Income tax expense
Total reclassifications for the period, net of tax	$ (0.6)	$ (0.6)	

(a) Amounts in parentheses indicate losses.

The following table summarizes the amounts reclassified from Accumulated other comprehensive loss, net of tax, in the nine months ended September 30, 2019 and 2018 and the affected line item in the Condensed Consolidated Statements of Operations:

Details about Accumulated Other Comprehensive Loss Components	Amount Reclassified from Accumulated Other Comprehensive Loss		Affected Line Item in Condensed Consolidated Statements of Operations
	2019	2018	
(in millions) [(a)]			
Amortization of actuarial losses of defined benefit pension plans	$ (2.5)	$ (2.8)	Other expense, net
Amortization of prior service costs of defined benefit pension plans	(0.1)	—	Other expense, net
Interest rate swap	0.9	0.4	Interest expense
Total before tax	(1.7)	(2.4)	
Income tax benefit	0.3	0.5	Income tax expense
Total reclassifications for the period, net of tax	$ (1.4)	$ (1.9)	

(a) Amounts in parentheses indicate losses.

NOTE 13 – SEGMENT INFORMATION

The Company has two reportable segments. Business units are organized under each reportable segment because they share certain characteristics, such as technology, marketing, distribution and product application, which create long-term synergies.

As discussed in Note 2 – Acquisitions, the assets and liabilities of MRL have been consolidated into the Condensed Consolidated Balance Sheet as of September 30, 2019, while the post-acquisition results of operations have been included in the Condensed Consolidated Statements of Operations subsequent to the July 1, 2019 closing date. MRL's post-acquisition results of operations are included within the Environmental Solutions Group.

The following tables summarize the Company's operations by segment, including Net sales, Operating income (loss), and Total assets:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(in millions)	**2019**	**2018**	**2019**	**2018**
Net sales:				
Environmental Solutions	$ 254.0	$ 216.3	$ 740.7	$ 646.2
Safety and Security Systems	54.8	53.1	166.2	163.9
Total net sales	$ 308.8	$ 269.4	$ 906.9	$ 810.1
Operating income (loss):				
Environmental Solutions	$ 35.9	$ 28.3	$ 106.4	$ 86.1
Safety and Security Systems	8.6	8.0	26.8	22.3
Corporate and eliminations	(5.9)	(5.9)	(22.5)	(20.3)
Total operating income	38.6	30.4	110.7	88.1
Interest expense	2.1	2.2	6.1	7.2
Other expense, net	0.2	—	0.5	0.5
Income before income taxes	$ 36.3	$ 28.2	$ 104.1	$ 80.4

(in millions)	**As of September 30, 2019**	**As of December 31, 2018**
Total assets:		
Environmental Solutions	$ 916.7	$ 775.2
Safety and Security Systems	217.1	211.5
Corporate and eliminations	39.4	36.7
Total assets of continuing operations	1,173.2	1,023.4
Total assets of discontinued operations	0.4	0.4
Total assets	$ 1,173.6	$ 1,023.8

NOTE 14 – FAIR VALUE MEASUREMENTS

The Company uses a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. This hierarchy maximizes the use of observable inputs and minimizes the use of unobservable inputs. Observable inputs are developed based on market data obtained from independent sources, while unobservable inputs reflect the Company's assumptions about valuation based on the best information available in the circumstances. The three levels of inputs are classified as follows:

- Level 1 — quoted prices in active markets for identical assets or liabilities;
- Level 2 — observable inputs, other than quoted prices included in Level 1, such as quoted prices for markets that are not active, or other inputs that are observable or can be corroborated by observable market data; and
- Level 3 — unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities, including certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

In determining fair value, the Company uses various valuation approaches within the fair value measurement framework. The valuation methodologies used for the Company's assets and liabilities measured at fair value and their classification in the valuation hierarchy are summarized below:

Cash Equivalents

Cash equivalents primarily consist of time-based deposits and interest-bearing instruments with maturities of three months or less. The Company classified cash equivalents as Level 1 due to the short-term nature of these instruments and measured the fair value based on quoted prices in active markets for identical assets.

Contingent Consideration

As further described in Note 2 – Acquisitions, the Company has a contingent obligation to transfer up to $15.5 million to the former owners of MRL if specified financial results are met over future reporting periods (i.e., an earn-out). In addition, during the third quarter of 2019, the Company paid $7.6 million to settle the contingent consideration liability due to the former owners of JJE based on the achievement of specified financial results over the three-year period following the closing of the acquisition.

Liabilities for contingent consideration are measured at fair value each reporting period, with the acquisition-date fair value included as part of the consideration transferred. Subsequent changes in fair value are recorded as a component of Acquisition and integration-related expenses on the Condensed Consolidated Statements of Operations.

The Company uses an income approach to value the contingent consideration obligation based on future financial performance, which is determined based on the present value of expected future cash flows. Due to the lack of relevant observable market data over fair value inputs, the Company has classified the contingent consideration liability within Level 3 of the fair value hierarchy outlined in ASC 820, *Fair Value Measurements*. Increases in the expected payout under a contingent consideration arrangement contribute to increases in the fair value of the related liability. Conversely, decreases in the expected payout under a contingent consideration arrangement contribute to decreases in the fair value of the related liability.

The following table summarizes the Company's assets and liabilities that are measured at fair value on a recurring basis as of September 30, 2019:

	Fair Value Measurement at Reporting Date Using			
(in millions)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
Cash equivalents	$ 17.6	$ —	$ —	$ 17.6
Liabilities:				
Contingent consideration	—	—	$ 8.0	$ 8.0

The following table provides a roll-forward of the fair value of recurring Level 3 fair value measurements in the three months ended September 30, 2019 and 2018:

(in millions)	**2019**	**2018**
Contingent consideration liability, at July 1	$ 7.6	$ 6.5
Issuance of contingent consideration in connection with acquisitions	7.9	—
Settlements of contingent consideration liabilities	(7.6)	—
Foreign currency translation	—	0.1
Total losses included in earnings [(a)]	0.1	0.3
Contingent consideration liability, at September 30	$ 8.0	$ 6.9

(a) Changes in the fair value of contingent consideration liabilities are included as a component of Acquisition and integration-related expenses within the Condensed Consolidated Statements of Operations.

The following table provides a roll-forward of the fair value of recurring Level 3 fair value measurements in the nine months ended September 30, 2019 and 2018:

(in millions)	2019	2018
Contingent consideration liability, at January 1	$ 6.7	$ 6.3
Issuance of contingent consideration in connection with acquisitions	7.9	—
Settlements of contingent consideration liabilities	(7.6)	—
Foreign currency translation	0.3	(0.1)
Total losses included in earnings [(a)]	0.7	0.7
Contingent consideration liability, at September 30	$ 8.0	$ 6.9

(a) Changes in the fair value of contingent consideration liabilities are included as a component of Acquisition and integration-related expenses within the Condensed Consolidated Statements of Operations.

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

Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is designed to provide information that is supplemental to, and should be read together with, the condensed consolidated financial statements and the accompanying notes contained in this Form 10-Q, as well as the Company's Annual Report on Form 10-K for the year ended December 31, 2018. Information in MD&A is intended to assist the reader in obtaining an understanding of (i) the condensed consolidated financial statements, (ii) the Company's business segments and how the results of those segments impact the Company's results of operations and financial condition as a whole and (iii) how certain accounting principles affect the Company's condensed consolidated financial statements. The Company's results for interim periods are not necessarily indicative of annual operating results.

Executive Summary

The Company is a leading global manufacturer and supplier of (i) vehicles and equipment for maintenance and infrastructure end-markets, including sewer cleaners, industrial vacuum loaders, vacuum- and hydro-excavation trucks (collectively, "safe-digging trucks"), street sweepers, road-marking and line-removal equipment, waterblasting equipment, dump truck bodies and trailers, and (ii) safety, security and communication equipment, such as lights, sirens and warning systems. In addition, we sell parts and provide service, repair, equipment rentals and training as part of a comprehensive aftermarket offering to our customer base. We operate 15 principal manufacturing facilities in five countries and provide products and integrated solutions to municipal, governmental, industrial and commercial customers in all regions of the world.

As described in Note 13 – Segment Information to the accompanying condensed consolidated financial statements, the Company's business units are organized in two reportable segments: the Environmental Solutions Group and the Safety and Security Systems Group.

Net sales increased by $39.4 million, or 15%, in the three months ended September 30, 2019 as compared to the prior-year quarter. Our Environmental Solutions Group reported a net sales increase of $37.7 million, or 17%, largely due to a $22.6 million contribution from MRL, which was acquired on July 1, 2019, as well as increases in shipments of safe-digging trucks, dump truck bodies and street sweepers of $6.6 million, $4.7 million, and $4.3 million, respectively. Within our Safety and Security Systems Group, net sales increased by $1.7 million, or 3%, primarily due to higher global sales of public safety products and industrial signaling equipment, partially offset by lower sales of warning systems and unfavorable foreign currency translation effects.

For the nine months ended September 30, 2019, net sales increased by $96.8 million, or 12%, as compared to the corresponding period of the prior year. Within our Environmental Solutions Group, net sales improved by $94.5 million, or 15%, primarily due to increases in shipments of safe-digging trucks, street sweepers, sewer cleaners and dump truck bodies of $30.4 million, $9.5 million, $7.6 million, and $6.6 million, respectively, a $22.6 million contribution from MRL, and a $12.0 million increase in aftermarket revenues, represented by higher rental income and improved parts and service sales. Within our Safety and Security Systems Group, net sales increased by $2.3 million, or 1%, primarily due to higher global sales of industrial signaling equipment and public safety products, partially offset by lower sales of warning systems and unfavorable foreign currency translation effects.

Operating income increased by $8.2 million, or 27%, to $38.6 million in the three months ended September 30, 2019 as compared to the prior-year quarter, primarily driven by a $7.6 million increase within our Environmental Solutions Group primarily due to increased sales volumes and improved operating leverage, as well as a $2.3 million contribution from MRL. Operating income in the three months ended September 30, 2019 within our Safety and Security Systems Group increased by $0.6 million, while Corporate expenses were generally unchanged from the prior-year quarter. Consolidated operating margin for the three months ended September 30, 2019 was 12.5%, up from 11.3% in the prior-year quarter.

For the nine months ended September 30, 2019, operating income increased by $22.6 million, or 26%, as compared to the corresponding period of the prior year. Within our Environmental Solutions Group, operating income for the nine months ended September 30, 2019 increased by $20.3 million, or 24%, largely due to higher sales volumes and improved operating leverage, as well as a $2.3 million contribution from MRL. Within our Safety and Security Systems Group, operating income in the nine months ended September 30, 2019 increased by $4.5 million, or 20%, largely due to benefits from pricing actions and improved sales mix, while Corporate expenses increased by $2.2 million. Consolidated operating margin for the nine months ended September 30, 2019 was 12.2%, compared to 10.9% in the prior-year period.

Income before income taxes increased by $8.1 million, or 29%, to $36.3 million for the three months ended September 30, 2019 as compared to the prior-year quarter. The increase resulted from the higher operating income and a $0.1 million decrease in interest expense, partially offset by a $0.2 million increase in other expense. For the nine months ended September 30, 2019, income before income taxes increased by $23.7 million, or 29%, as compared to the prior-year period, primarily due to the higher operating income and a $1.1 million decrease in interest expense.

Net income for the three months ended September 30, 2019 increased by $6.7 million compared to the prior-year period, largely due to the aforementioned increase in income before income taxes, partially offset by a $1.4 million increase in income tax expense, primarily due to higher income tax levels, which was partially offset by the recognition of a $0.6 million benefit resulting from the completion of a tax audit and a $0.6 million excess tax benefit from stock compensation activity, which lowered the effective tax rate for the three months ended September 30, 2019 to 21.8%.

For the nine months ended September 30, 2019, net income increased by $17.2 million compared to the corresponding period of the prior year, largely due to the aforementioned increase in income before income taxes, partially offset by a $6.5 million increase in income tax expense, primarily due to higher income tax levels. The effective tax rate for the nine months ended September 30, 2019 was 24.4%. We currently expect our full-year effective tax rate to be within the range of 24% to 25%.

Total orders for the three months ended September 30, 2019 were $328.8 million, an increase of $60.7 million, or 23%, as compared to the prior-year quarter. Our Environmental Solutions Group reported total orders of $270.2 million in the third quarter of 2019, up $55.7 million, or 26% in comparison to the prior-year quarter, with orders from the MRL acquisition accounting for $39.6 million of the growth. Orders in the three months ended September 30, 2019 within our Safety and Security Systems Group were $58.6 million, up $5.0 million, or 9%, compared to the prior-year quarter.

For the nine months ended September 30, 2019, total orders were $935.8 million, an increase of $60.4 million, or 7%, compared to the same period in 2018. Our Environmental Solutions Group reported total orders of $767.1 million in the nine months ended September 30, 2019, an increase of $60.9 million, or 9%, compared to the same period in 2018. Orders in the nine months ended September 30, 2019 within our Safety and Security Systems Group were generally consistent with the same period of last year.

Our consolidated backlog at September 30, 2019 was $366.9 million, up $46.3 million, or 14%, compared to the end of the prior-year quarter.

Results of Operations

The following table summarizes our Condensed Consolidated Statements of Operations and illustrates the key financial indicators used to assess our consolidated financial results:

	Three Months Ended September 30,			Nine Months Ended September 30,		
($ in millions, except per share data)	**2019**	**2018**	**Change**	**2019**	**2018**	**Change**
Net sales	$ 308.8	$ 269.4	$ 39.4	$ 906.9	$ 810.1	$ 96.8
Cost of sales	226.8	200.4	26.4	665.6	600.0	65.6
Gross profit	82.0	69.0	13.0	241.3	210.1	31.2
Selling, engineering, general and administrative expenses	43.0	38.2	4.8	128.7	120.7	8.0
Acquisition and integration-related expenses	0.4	0.4	—	1.9	1.3	0.6
Operating income	38.6	30.4	8.2	110.7	88.1	22.6
Interest expense	2.1	2.2	(0.1)	6.1	7.2	(1.1)
Other expense, net	0.2	—	0.2	0.5	0.5	—
Income before income taxes	36.3	28.2	8.1	104.1	80.4	23.7
Income tax expense	7.9	6.5	1.4	25.4	18.9	6.5
Net income	$ 28.4	$ 21.7	$ 6.7	$ 78.7	$ 61.5	$ 17.2
Operating data:						
Operating margin	12.5%	11.3%	1.2%	12.2%	10.9%	1.3%
Diluted earnings per share	$ 0.46	$ 0.36	$ 0.10	$ 1.28	$ 1.01	$ 0.27
Total orders	328.8	268.1	60.7	935.8	875.4	60.4
Backlog	366.9	320.6	46.3	366.9	320.6	46.3
Depreciation and amortization	10.8	9.4	1.4	30.1	27.0	3.1

Net sales

Net sales increased by $39.4 million, or 15%, in the three months ended September 30, 2019 as compared to the prior-year quarter. The Environmental Solutions Group reported a net sales increase of $37.7 million, or 17%, largely due to a $22.6 million contribution from MRL, which was acquired on July 1, 2019, as well as increases in shipments of safe-digging trucks, dump truck bodies and street sweepers of $6.6 million, $4.7 million, and $4.3 million, respectively. Within the Safety and Security Systems Group, net sales increased by $1.7 million, or 3%, primarily due to higher global sales of public safety products and industrial signaling equipment, partially offset by lower sales of warning systems and unfavorable foreign currency translation effects.

For the nine months ended September 30, 2019, net sales increased by $96.8 million, or 12%, as compared to the corresponding period of the prior year. Within the Environmental Solutions Group, net sales improved by $94.5 million, or 15%, primarily due to increases in shipments of safe-digging trucks, street sweepers, sewer cleaners and dump truck bodies of $30.4 million, $9.5 million, $7.6 million, and $6.6 million, respectively, a $22.6 million contribution from MRL, and a $12.0 million increase in aftermarket revenues, represented by higher rental income and improved parts and service sales. Within the Safety and Security Systems Group, net sales increased by $2.3 million, or 1%, primarily due to higher global sales of industrial signaling equipment and public safety products, partially offset by lower sales of warning systems and unfavorable foreign currency translation effects.

Cost of sales

Cost of sales increased by $26.4 million, or 13%, for the three months ended September 30, 2019 compared to the prior-year quarter, largely due to an increase of $26.7 million, or 16%, within the Environmental Solutions Group, primarily attributable to increased sales volumes, additional cost of sales from the MRL acquisition, and a $1.1 million increase in depreciation expense. Within the Safety and Security Systems Group, cost of sales decreased by $0.3 million, or 1%, primarily related to improved sales mix and a favorable foreign currency translation impact of $0.4 million, partially offset by higher sales volumes.

For the nine months ended September 30, 2019, cost of sales increased by $65.6 million, or 11%, largely due to an increase of $68.5 million, or 14%, within the Environmental Solutions Group, primarily attributable to increased sales volumes, additional cost of sales from the MRL acquisition, higher material costs in comparison to the same period of 2018, and a $3.0 million increase in depreciation expense, partially offset by a $0.6 million reduction in purchase accounting expenses. This increase was partially offset by a decrease in cost of sales of $2.9 million, or 3%, within the Safety and Security Systems Group, largely due to favorable sales mix and a favorable foreign currency translation impact of $1.9 million, partially offset by higher sales volumes.

Gross profit

Gross profit increased by $13.0 million, or 19%, for the three months ended September 30, 2019, compared to the prior-year quarter, primarily due to improvements of $11.0 million and $2.0 million within the Environmental Solutions Group and the Safety and Security Systems Group, respectively. Gross margin for the three months ended September 30, 2019 improved to 26.6%, from 25.6% in the prior-year quarter, primarily driven by improvements within the Safety and Security Group and Environmental Solutions Group of 250 basis points and 100 basis points, respectively. Margin improvements were primarily attributable to improved operating leverage, benefits from pricing actions and favorable sales mix.

For the nine months ended September 30, 2019, gross profit increased by $31.2 million, or 15%, primarily due to improvements of $26.0 million and $5.2 million within the Environmental Solutions Group and the Safety and Security Systems Group, respectively. Gross margin for the nine months ended September 30, 2019 was 26.6%, compared to 25.9% in the prior-year period, primarily driven by improvements within the Safety and Security Group and Environmental Solutions Group of 270 basis points and 50 basis points, respectively. Margin improvements were primarily attributable to improved operating leverage, benefits from pricing actions and favorable sales mix.

Selling, engineering, general and administrative expenses

Selling, engineering, general and administrative ("SEG&A") expenses for the three months ended September 30, 2019 increased by $4.8 million, or 13%, primarily due to increases within the Environmental Solutions Group and the Safety and Security Systems Group of $3.6 million and $1.4 million, respectively, partially offset by a $0.2 million reduction in Corporate SEG&A expenses. As a percentage of net sales, SEG&A expenses decreased from 14.2% in the prior-year quarter, to 13.9% in the current-year quarter.

For the nine months ended September 30, 2019, SEG&A expenses increased by $8.0 million, or 7%, primarily due to increases within the Environmental Solutions Group and the Safety and Security Systems Group of $5.5 million and $0.7 million, respectively. In addition, Corporate SEG&A expenses increased by $1.8 million. As a percentage of net sales, SEG&A expenses decreased from 14.9% in the prior-year period, to 14.2% in the current-year period.

Operating income

Operating income increased by $8.2 million, or 27%, to $38.6 million in the three months ended September 30, 2019 as compared to the prior-year quarter, primarily driven by a $7.6 million increase within the Environmental Solutions Group primarily due to increased sales volumes and improved operating leverage, as well as a $2.3 million contribution from MRL. Operating income in the three months ended September 30, 2019 within the Safety and Security Systems Group increased by $0.6 million, while Corporate expenses were generally unchanged from the prior-year quarter. Consolidated operating margin for the three months ended September 30, 2019 was 12.5%, up from 11.3% in the prior-year quarter.

For the nine months ended September 30, 2019, operating income increased by $22.6 million as compared to the corresponding period of the prior year. Within the Environmental Solutions Group, operating income for the nine months ended September 30, 2019 increased by $20.3 million, or 24%, largely due to higher sales volumes and improved operating leverage, as well as a $2.3 million contribution from MRL. Within the Safety and Security Systems Group, operating income in the nine months ended September 30, 2019 increased by $4.5 million, or 20%, largely due to benefits from pricing actions and improved sales mix, while Corporate expenses increased by $2.2 million. Consolidated operating margin for the nine months ended September 30, 2019 was 12.2%, compared to 10.9% in the prior-year period.

Interest expense

Interest expense for the three months ended September 30, 2019 decreased by $0.1 million, or 5%, while in the nine months ended September 30, 2019, interest expense decreased by $1.1 million, or 15%. The reductions in both periods were largely due to lower average debt levels when compared to the same periods of the prior year.

Other expense, net

For the three months ended September 30, 2019, other expense totaled $0.2 million, while in the prior-year quarter, other expense was immaterial. The increase in expense was primarily due to higher pension expense in comparison to the prior-year quarter. For the nine months ended September 30, 2019, other expense totaled $0.5 million, largely unchanged from the prior-year period, with increases in pension expense being partially offset by higher foreign currency transaction gains.

Income tax expense

The Company recognized income tax expense of $7.9 million and $6.5 million for the three months ended September 30, 2019 and 2018, respectively. The increase in tax expense in the current-year quarter was largely due to higher pre-tax income levels, which was partially offset by the recognition of a $0.6 million benefit resulting from the completion of a tax audit and a $0.6 million excess tax benefit from stock compensation activity. The Company's effective tax rate for the three months ended September 30, 2019 was 21.8%, compared to 23.0% in the prior-year quarter.

For the nine months ended September 30, 2019 and 2018, the Company recognized income tax expense of $25.4 million and $18.9 million, respectively. The increase in tax expense in the current year was largely due to higher pre-tax income levels. The Company's effective tax rate for the nine months ended September 30, 2019 was 24.4%, compared to 23.5% in the prior-year period.

Net income

Net income for the three months ended September 30, 2019 increased by $6.7 million compared to the prior-year period, largely due to the aforementioned increase in operating income and the $0.1 million reduction in interest expense, partially offset by the $0.2 million increase in other expense and the $1.4 million increase in income tax expense.

For the nine months ended September 30, 2019, net income increased by $17.2 million compared to the corresponding period of the prior year, largely due to the aforementioned increase in operating income and the $1.1 million reduction in interest expense, partially offset by the $6.5 million increase in income tax expense.

Orders

On the date of acquisition, MRL had a backlog of orders from its end customers of $26.7 million. These acquired orders were included in total orders reported for the three and nine months ended September 30, 2019.

Three months ended September 30, 2019 vs. three months ended September 30, 2018

Total orders for the three months ended September 30, 2019 were $328.8 million, an increase of $60.7 million, or 23%, as compared to the prior-year quarter. The Environmental Solutions Group reported total orders of $270.2 million in the third quarter of 2019, up $55.7 million, or 26% in comparison to the prior-year quarter, with orders from the MRL acquisition accounting for $39.6 million of the growth. Orders in the three months ended September 30, 2019 within the Safety and Security Systems Group were $58.6 million, up $5.0 million, or 9%, compared to the prior-year quarter.

U.S. municipal and governmental orders increased by $36.8 million, or 38%, largely due to a $34.1 million increase within the Environmental Solutions Group, primarily due to the acquisition of MRL, which contributed $15.1 million of orders, as well as improvements in orders for sewer cleaners, street sweepers, and safe-digging trucks of $9.7 million, $7.3 million, and $0.9 million, respectively. Within the Safety and Security Systems Group, there was a $2.7 million order increase, due to improvements in orders for warning systems and public safety products of $1.7 million and $1.0 million, respectively.

U.S. industrial orders increased by $12.9 million, or 11%, primarily due to a $13.5 million increase within the Environmental Solutions Group, primarily due to the acquisition of MRL, which contributed $23.2 million of orders, a $2.9 million increase in orders for safe-digging trucks, and a $1.6 million improvement in aftermarket demand. Partially offsetting these increases were reductions in orders for industrial vacuum loaders, trailers, street sweepers, and dump truck bodies of $7.4 million, $2.9 million, $2.1 million, and $1.4 million, respectively. Within the Safety and Security Systems Group, there was a $0.6 million order decrease, primarily due to reductions in orders for industrial signaling equipment and warning systems of $0.8 million and $0.6 million respectively, partially offset by a $0.8 million improvement in orders for public safety products.

Non-U.S. orders increased by $11.0 million, or 19%, primarily due to a $8.1 million increase within the Environmental Solutions Group, largely represented by improvements in orders for refuse trucks, safe-digging trucks, and street sweepers of $5.2 million, $2.6 million, and $1.1 million, respectively. The acquisition of MRL also contributed $1.3 million of orders, and aftermarket demand increased by $1.2 million. Partially offsetting these improvements was a $2.6 million decrease in orders for sewer cleaners. Within the Safety and Security Solutions Group, non-U.S. orders increased by $2.9 million, largely due to improvements in orders for public safety products and industrial signaling equipment of $4.2 million and $1.1 million, respectively, which were partially offset by a $1.9 million reduction in orders for warning systems and an unfavorable foreign currency translation impact of $0.5 million.

Nine months ended September 30, 2019 vs. nine months ended September 30, 2018

For the nine months ended September 30, 2019, total orders were $935.8 million, an increase of $60.4 million, or 7%, compared to the same period in 2018. The Environmental Solutions Group reported total orders of $767.1 million in the nine months ended September 30, 2019, an increase of $60.9 million, or 9%, compared to the same period in 2018. Orders in the nine months ended September 30, 2019 within the Safety and Security Systems Group were generally consistent with the same period of last year.

U.S. municipal and governmental orders increased by $31.8 million, or 11%, due to a $36.0 million increase within the Environmental Solutions Group, primarily due to the acquisition of MRL, which contributed $15.1 million of orders, as well as improvements in orders for sewer cleaners, safe-digging trucks, and dump truck bodies of $11.0 million, $5.1 million, and $3.0 million, respectively. Additionally, aftermarket demand increased by $2.6 million. These increases were partially offset by a decrease in orders for street sweepers of $1.2 million. Within the Safety and Security Systems Group, there was a $4.2 million order reduction, mainly driven by decreases in orders for public safety products and warning systems of $3.4 million and $0.8 million, respectively.

U.S. industrial orders increased by $3.5 million, or 1%, primarily due to a $2.9 million increase within the Safety and Security Systems Group, largely represented by a $3.4 million improvement in orders for public safety products, partially offset by a $0.8 million reduction in orders for warning systems. Within the Environmental Solutions Group, there was a $0.6 million order increase, primarily due to the acquisition of MRL, which contributed $23.2 million of orders, an $8.7 million increase in aftermarket demand, and a $1.5 million improvement in orders for safe-digging trucks. These increases were partially offset by decreases in orders for sewer cleaners, trailers, industrial vacuum loaders, dump truck bodies and street sweepers of $10.5 million, $10.3 million, $5.7 million, $3.9 million and $1.9 million, respectively.

Non-U.S. orders increased by $25.1 million, or 13%, largely due to a $24.3 million increase within the Environmental Solutions Group, primarily driven by increases in orders for safe-digging trucks, refuse trucks, and street sweepers of $14.4 million, $12.1 million, and $2.6 million, respectively. In addition, the acquisition of MRL contributed $1.3 million of orders, and aftermarket demand increased by $4.6 million. Partially offsetting these improvements were reductions in orders for sewer cleaners, industrial vacuum loaders, and waterblasting equipment of $4.2 million, $2.4 million, and $1.8 million, respectively. Within the Safety and Security Solutions Group, non-U.S. orders increased by $0.8 million, largely due to improvements in orders for industrial signaling equipment and public safety products of $3.6 million and $2.7 million, respectively, which were partially offset by a $3.0 million reduction in orders for warning systems and an unfavorable foreign currency translation impact of $2.5 million.

Backlog

Backlog was $366.9 million at September 30, 2019 compared to $320.6 million at September 30, 2018. The increase of $46.3 million, or 14%, was primarily due to a $48.2 million increase in backlog within the Environmental Solutions Group, largely associated with strong demand for sewer cleaners, safe-digging trucks, and street sweepers, as well as the additional of MRL's order backlog.

Environmental Solutions

The following table summarizes the Environmental Solutions Group's operating results as of and for the three and nine months ended September 30, 2019 and 2018:

	Three Months Ended September 30,			Nine Months Ended September 30,		
($ in millions)	**2019**	**2018**	**Change**	**2019**	**2018**	**Change**
Net sales	$ 254.0	$ 216.3	$ 37.7	$ 740.7	$ 646.2	$ 94.5
Operating income	35.9	28.3	7.6	106.4	86.1	20.3
Operating data:						
Operating margin	14.1%	13.1%	1.0%	14.4%	13.3%	1.1%
Total orders	$ 270.2	$ 214.5	$ 55.7	$ 767.1	$ 706.2	$ 60.9
Backlog	337.8	289.6	48.2	337.8	289.6	48.2
Depreciation and amortization	10.0	8.4	1.6	27.5	24.1	3.4

Three months ended September 30, 2019 vs. three months ended September 30, 2018

Total orders increased by $55.7 million, or 26%, for the three months ended September 30, 2019. U.S. orders increased by $47.6 million, or 27%, primarily due to the acquisition of MRL which contributed $38.3 million of orders, as well as improvements in orders for sewer cleaners, street sweepers, and safe-digging trucks of $9.5 million, $5.2 million, and $3.8 million respectively. Additionally, aftermarket demand increased by $2.0 million. Partially offsetting these improvements were reductions in orders for industrial vacuum loaders and trailers of $7.4 million and $2.9 million, respectively. Non-U.S. orders increased by $8.1 million, or 21%, primarily due to improvements in orders for refuse trucks, safe-digging trucks, and street sweepers of $5.2 million, $2.6 million, and $1.1 million, respectively. The acquisition of MRL also contributed $1.3 million of orders and aftermarket demand increased by $1.2 million. Partially offsetting these improvements was a $2.6 million decrease in orders for sewer cleaners.

Net sales increased by $37.7 million, or 17%, for the three months ended September 30, 2019. U.S. sales increased by $36.9 million, or 20%, largely due to the addition of $21.8 million of incremental sales from the MRL acquisition, and increases in shipments of safe-digging trucks, dump truck bodies, street sweepers and waterblasting equipment of $6.2 million, $5.0 million, $1.4 million, and $1.4 million respectively. Additionally, aftermarket demand increased by $3.3 million. Partially offsetting these improvements was a $1.5 million reduction in shipments of industrial vacuum loaders. Non-U.S. sales increased by $0.8 million, or 2%, primarily due to a $2.9 million increase in sales of street sweepers and the addition of $0.8 million of incremental sales from the MRL acquisition. Partially offsetting these improvements were reductions in shipments of sewer cleaners, waterblasting equipment, and snow removal equipment of $1.4 million, $0.5 million, and $0.5 million, respectively.

Cost of sales increased by $26.7 million, or 16%, for the three months ended September 30, 2019, primarily attributable to increased sales volumes, additional cost of sales from the MRL acquisition, and a $1.1 million increase in depreciation expense. Gross margin improved to 23.7% from 22.7% in the prior-year quarter, primarily due to improved operating leverage, benefits from pricing actions, and favorable sales mix.

SEG&A expenses increased by $3.6 million for the three months ended September 30, 2019, primarily due to the addition of expenses of businesses acquired in the current year, higher employee related expenses and a $0.4 million increase in amortization expense. As a percentage of net sales, SEG&A expenses were 9.5% in both the current- and prior-year quarters.

Operating income for the three months ended September 30, 2019 increased by $7.6 million, largely due to a $11.0 million increase in gross profit and a $0.2 million decrease in acquisition-related expenses, partially offset by the $3.6 million increase in SEG&A expenses.

Nine months ended September 30, 2019 vs. nine months ended September 30, 2018

Total orders increased by $60.9 million, or 9%, for the nine months ended September 30, 2019. U.S. orders increased by $36.6 million, or 6%, primarily due to the acquisition of MRL which contributed $38.3 million of orders, a $6.6 million increase in orders for safe-digging trucks, and a $11.3 million improvement in aftermarket demand. Partially offsetting these improvements were reductions in orders for trailers, industrial vacuum loaders, and street sweepers of $10.3 million, $5.7 million, and $3.1 million, respectively. Non-U.S. orders increased by $24.3 million, or 19%, primarily due to increases in orders for safe-digging trucks, refuse trucks, and street sweepers of $14.4 million, $12.1 million, and $2.6 million, respectively. In addition, the acquisition of MRL contributed $1.3 million of orders, and aftermarket demand increased by $4.6 million. Partially offsetting these improvements were reductions in orders for sewer cleaners, industrial vacuum loaders, and waterblasting equipment of $4.2 million, $2.4 million, and $1.8 million, respectively.

Net sales increased by $94.5 million, or 15%, for the nine months ended September 30, 2019. U.S. sales increased by $72.6 million, or 14%, primarily due to increases in sales of safe-digging trucks, dump truck bodies, street sweepers, waterblasting equipment, and sewer cleaners of $22.0 million, $6.9 million, $4.2 million, $3.9 million, and $2.3 million, respectively. In addition, the MRL acquisition contributed $21.8 million of incremental sales and aftermarket revenues increased by $9.0 million, represented by higher rental income and improved parts and service sales. Partially offsetting these increases was a reduction in sales of trailers and industrial vacuum loaders of $3.5 million and $0.7 million, respectively. Non-U.S. sales increased by $21.9 million, or 19%, primarily due to increases in sales of safe-digging trucks, sewer cleaners, street sweepers, and refuse trucks of $8.4 million, $5.3 million, $5.3 million and $4.0 million, respectively. In addition, aftermarket revenues increased by $3.0 million. Partially offsetting these increases was a $3.3 million reduction in sales of snow removal equipment.

Cost of sales increased by $68.5 million, or 14%, for the nine months ended September 30, 2019, primarily attributable to increased sales volumes, additional cost of sales from the MRL acquisition, higher material costs in comparison to the same period of 2018, and a $3.0 million increase in depreciation expense, partially offset by a $0.6 million reduction in purchase accounting expenses. Gross margin improved to 23.7% from 23.2% in the prior-year period, primarily due to improved operating leverage, benefits from pricing actions, and favorable sales mix.

SEG&A expenses increased by $5.5 million for the nine months ended September 30, 2019, primarily due to the addition of expenses of businesses acquired in the current year, higher employee-related costs and a $0.4 million increase in amortization expense. As a percentage of net sales, SEG&A expenses decreased from 9.7% in the prior-year period, to 9.2% in the current-year period.

Operating income for the nine months ended September 30, 2019 increased by $20.3 million, largely due to a $26.0 million increase in gross profit, partially offset by the $5.5 million increase in SEG&A expenses and a $0.2 million increase in acquisition-related expenses.

Backlog was $337.8 million at September 30, 2019, up $48.2 million, or 17% compared to $289.6 million at September 30, 2018. The increase was largely due to continued strong demand for sewer cleaners, safe-digging trucks, and street sweepers.

Safety and Security Systems

The following table summarizes the Safety and Security Systems Group's operating results as of and for the three and nine months ended September 30, 2019 and 2018:

	Three Months Ended September 30,			Nine Months Ended September 30,		
($ in millions)	**2019**	**2018**	**Change**	**2019**	**2018**	**Change**
Net sales	$ 54.8	$ 53.1	$ 1.7	$ 166.2	$ 163.9	$ 2.3
Operating income	8.6	8.0	0.6	26.8	22.3	4.5
Operating data:						
Operating margin	15.7%	15.1%	0.6%	16.1%	13.6%	2.5%
Total orders	$ 58.6	$ 53.6	$ 5.0	$ 168.7	$ 169.2	$ (0.5)
Backlog	29.1	31.0	(1.9)	29.1	31.0	(1.9)
Depreciation and amortization	0.8	0.9	(0.1)	2.5	2.8	(0.3)

Three months ended September 30, 2019 vs. three months ended September 30, 2018

Total orders for the three months ended September 30, 2019 increased by $5.0 million, or 9%, compared with the prior-year quarter. U.S. orders increased by $2.1 million, primarily driven by improvements in orders for public safety products and warning systems of $1.8 million and $1.1 million, respectively. Partially offsetting these increases was a $0.8 million reduction in orders for industrial signaling equipment. Non-U.S. orders increased by $2.9 million, largely due to improvements in orders for public safety products and industrial signaling equipment of $4.2 million and $1.1 million, respectively, which were partially offset by a $1.9 million reduction in orders for warning systems and an unfavorable foreign currency translation impact of $0.5 million.

Net sales increased by $1.7 million, or 3%, for the three months ended September 30, 2019. U.S. sales increased by $0.7 million, primarily driven by improvements in sales of public safety products and industrial signaling equipment of $0.9 million and $0.3 million, respectively. Partially offsetting these increases was a $0.5 million reduction in sales of warning systems. Non-U.S. sales increased by $1.0 million, largely due to improvements in sales of industrial signaling equipment and public safety products of $1.7 million and $1.4 million, respectively, which were partially offset by a $1.6 million reduction in sales of warning systems and an unfavorable foreign currency translation impact of $0.5 million.

Cost of sales for the three months ended September 30, 2019 decreased by $0.3 million, or 1%, primarily related to improved sales mix and a favorable foreign currency translation impact of $0.4 million, partially offset by higher sales volumes. Gross margin for the three months ended September 30, 2019 improved to 40.0%, compared to 37.5% in the prior-year quarter, primarily due to benefits from pricing actions and improved sales mix in comparison to the prior-year quarter.

SEG&A expenses for the three months ended September 30, 2019 increased by $1.4 million, or 12%, in comparison to the prior-year quarter, primarily due to higher employee-related costs. As a percentage of net sales, SEG&A expenses increased from 22.4% in the prior-year quarter, to 24.3% in the current-year quarter.

Operating income increased by $0.6 million, or 8%, for the three months ended September 30, 2019. The increase was primarily attributable to the $2.0 million improvement in gross profit, partially offset by the $1.4 million increase in SEG&A expenses.

Nine months ended September 30, 2019 vs. nine months ended September 30, 2018

Total orders decreased by $0.5 million for the nine months ended September 30, 2019. U.S. orders decreased by $1.3 million, primarily due to a $1.6 million reduction in orders for warning systems, partially offset by a $0.3 million increase in orders for industrial signaling equipment. Non-U.S. orders increased by $0.8 million, largely due to improvements in orders for industrial signaling equipment and public safety products of $3.6 million and $2.7 million, respectively, which were partially offset by a $3.0 million reduction in orders for warning systems and an unfavorable foreign currency translation impact of $2.5 million.

Net sales increased by $2.3 million, or 1%, for the nine months ended September 30, 2019. U.S. sales increased by $0.6 million, primarily driven by improvements in sales of industrial signaling equipment and public safety products of $2.2 million and $0.7 million, respectively, which were partially offset by a $2.3 million reduction in sales of warning systems. Non-U.S. sales increased by $1.7 million, largely due to improvements in sales of industrial signaling equipment and public safety products of $3.6 million and $2.7 million, respectively, which were partially offset by a $2.1 million reduction in sales of warning systems and an unfavorable foreign currency translation impact of $2.5 million.

Cost of sales for the nine months ended September 30, 2019 decreased by $2.9 million, or 3%, largely due to favorable sales mix and a favorable foreign currency translation impact of $1.9 million, partially offset by higher sales volumes. Gross margin for the nine months ended September 30, 2019 improved to 39.4%, compared to 36.7% in the prior-year period, primarily due to benefits from pricing actions and improved sales mix in comparison to the prior-year period.

SEG&A expenses for the nine months ended September 30, 2019 increased by $0.7 million, or 2%. As a percentage of net sales, SEG&A expenses were 23.2%, largely unchanged in comparison to the prior-year period.

Operating income increased by $4.5 million for the nine months ended September 30, 2019. The increase was primarily attributable to the $5.2 million improvement in gross profit, partially offset by the $0.7 million increase in SEG&A expenses.

Backlog was $29.1 million at September 30, 2019, compared to $31.0 million at September 30, 2018.

Corporate Expenses

Corporate operating expenses for the three months ended September 30, 2019 were $5.9 million, largely unchanged from the prior-year quarter, with nominal reductions in general corporate expenses partially offsetting a $0.2 million increase in acquisition-related expenses.

Corporate operating expenses for the nine months ended September 30, 2019 were $22.5 million, compared to $20.3 million in the prior-year period. The increase was primarily driven by higher employee-related costs, post-employment expenses, and a $0.4 million increase in acquisition-related expenses, which were partially offset by lower expenses associated with hearing loss litigation.

Seasonality of Company's Business

Certain of the Company's businesses are susceptible to the influences of seasonal factors, including buying patterns, delivery patterns and productivity influences from holiday periods and weather. In general, the Company tends to have lower equipment sales in the first calendar quarter of each year compared to other quarters as a result of these factors. In addition, rental income and parts sales are generally higher in the second and third quarters of the year, because many of the Company's products are used for maintenance activities in North America, where usage is typically lower during periods of harsher weather conditions.

Financial Condition, Liquidity and Capital Resources

The Company uses its cash flow from operations to fund growth and to make capital investments that sustain its operations, reduce costs, or both. Beyond these uses, remaining cash is used to pay down debt, repurchase shares, fund dividend payments and make pension contributions. The Company may also choose to invest in the acquisition of businesses. In the absence of significant unanticipated cash demands, we believe that the Company's existing cash balances, cash flow from operations and borrowings available under the Company's credit facility will provide funds sufficient for these purposes. The net cash flows associated with the Company's rental equipment transactions are included in cash flow from operating activities.

The Company's cash and cash equivalents totaled $35.9 million and $37.4 million as of September 30, 2019 and December 31, 2018, respectively. As of September 30, 2019, $18.3 million of cash and cash equivalents was held by foreign subsidiaries. Cash and cash equivalents held by subsidiaries outside the U.S. typically are held in the currency of the country in which it is located. This cash is used to fund the operating activities of our foreign subsidiaries and for further investment in foreign operations. Historically, we have considered such cash to be permanently reinvested in our foreign operations and our current plans do not demonstrate a need to repatriate such cash to fund U.S. operations. However, in the event that these funds are needed to fund U.S. operations or to satisfy U.S. obligations, they generally could be repatriated. The repatriation of these funds may cause us to incur additional U.S. income tax expense, dependent on income tax laws and other circumstances at the time any such amounts are repatriated. While the Company has no transition tax liability, the Company continues to assert that its undistributed earnings of certain foreign subsidiaries are indefinitely reinvested. The Company will continue to evaluate its U.S. and foreign cash needs and, as circumstances change, may change its assertion related to all or a portion of its undistributed foreign earnings.

In the nine months ended September 30, 2019, net cash of $58.6 million was provided by operating activities, compared to $71.8 million in the prior-year period. Higher earnings and a $7.1 million reduction in pension contributions were partially offset by a $7.2 million increase in income tax payments, investments in working capital and rental fleet, as well as higher incentive compensation payments in comparison to the prior year. In addition, the Company funded payments of $3.1 million relating to the 2016 JJE acquisition.

Net cash of $70.3 million was used for investing activities in the nine months ended September 30, 2019, compared to $7.1 million in the prior-year period. As discussed in Note 2 – Acquisitions, the Company paid an initial sum of $49.6 million (net of cash acquired) to acquire MRL. In addition, during the nine months ended September 30, 2018, the Company received $3.0 million as part of the finalization of certain post-closing adjustments in connection with the 2017 acquisition of Truck Bodies and Equipment International. Capital expenditures in the nine months ended September 30, 2019 and 2018 were $21.2 million and $10.1 million, respectively, with the increase largely related to the ongoing plant expansions at our Vactor and Rugby facilities.

Net cash of $10.5 million was provided by financing activities in the nine months ended September 30, 2019, whereas in the prior-year period, $66.6 million of net cash was used for financing activities. In the nine months ended September 30, 2019, primarily in relation to the funding of the acquisition of MRL, the Company's net borrowings under its revolving credit facility increased by $37.5 million. In addition, the Company funded payments of $10.3 million relating to the 2016 JJE acquisition, paid cash dividends of $14.5 million, incurred $1.0 million of debt refinancing costs, repurchased $1.0 million of treasury stock, received $1.7 million of proceeds from stock-based compensation activity and redeemed $1.9 million of stock in order to remit funds to tax authorities to satisfy employees' tax withholdings relating to stock compensation activity. In the nine months ended September 30, 2018, the Company paid down $53.6 million of debt, funded cash dividends of $13.8 million and received $1.1 million of proceeds from stock-based compensation activity.

On July 30, 2019, the Company entered into the 2019 Credit Agreement, which amends and restates the Amended 2016 Credit Agreement. The 2019 Credit Agreement increases the Company's revolving credit facility from $400 million to $500 million. In addition, the Company may cause the revolving commitments to increase by and/or incur term loans up to an additional $250 million, subject to the approval of the applicable lenders providing such additional financing.

The Company is subject to certain net leverage ratio and interest coverage ratio financial covenants under the 2019 Credit Agreement that are to be measured at each fiscal quarter-end. The Company was in compliance with all such covenants as of September 30, 2019.

As of September 30, 2019, there was $248.7 million of cash drawn and $11.3 million of undrawn letters of credit under the 2019 Credit Agreement, with $240.0 million of net availability for borrowings.

During the nine months ended September 30, 2019, the Company announced plans to expand the primary production facility of its Vactor Manufacturing, Inc. subsidiary. Over the course of the expansion project, the Company is expecting to invest up to $25 million, with approximately $15 million of expenditure currently expected in 2019. The Company anticipates that capital expenditures for 2019, excluding investment associated with the Vactor plant expansion, will be in the range of $15 million to $20 million.

Contractual Obligations and Off-Balance Sheet Arrangements

During the nine months ended September 30, 2019, there have been no material changes in the Company's contractual obligations and off-balance sheet arrangements as described in Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations*, of the Company's Annual Report on Form 10-K for the year ended December 31, 2018.

Item 3. *Quantitative and Qualitative Disclosures about Market Risk.*

See Item 7A, *Quantitative and Qualitative Disclosures about Market Risk*, of the Company's Annual Report on Form 10-K for the year ended December 31, 2018. During the nine months ended September 30, 2019, there have been no significant changes in our exposure to market risk.

Item 4. *Controls and Procedures.*

As required by Rule 13a-15 under the Exchange Act, the Company's management, with the participation of the Company's Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of the design and operation of the Company's disclosure controls and procedures (as defined in Rule 13a-15(e) or Rule 15d-15(e) under the Exchange Act) as of September 30, 2019. Based on that evaluation, the Company's Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures were effective as of September 30, 2019.

As a matter of practice, the Company's management continues to review and document internal control and procedures for financial reporting. From time to time, the Company may make changes aimed at enhancing the effectiveness of the controls and ensuring that the systems evolve with the business. SEC guidance permits management to omit an assessment of internal control over financial reporting for an acquired business from management's assessment of internal control over financial reporting for a period not to exceed one year from the date of the acquisition. During the three months ended September 30, 2019, the Company completed the acquisition of MRL. As of September 30, 2019, management has not yet fully assessed MRL's internal control over financial reporting. Excluding the acquisition of MRL, there were no changes in the Company's internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting during the three months ended September 30, 2019.

PART II. OTHER INFORMATION

Item 1. *Legal Proceedings.*

The information set forth under the heading “Legal Proceedings” in Note 10 – Commitments and Contingencies to the accompanying condensed consolidated financial statements as included in Part I of this Form 10-Q is incorporated herein by reference.

Item 1A. *Risk Factors.*

There have been no material changes in the Company’s risk factors as described in Item 1A, *Risk Factors*, of the Company’s Annual Report on Form 10-K for the year ended December 31, 2018, except that the Company entered into a new three-year collective bargaining agreement with the International Brotherhood of Electrical Workers, effective April 2019.

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

The following table provides a summary of the Company’s repurchase activity for its common stock during the three months ended September 30, 2019:

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 Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs [(a)]
July 2019 (6/30/19 – 8/3/19)	—	$ —	—	$ 29,198,155
August 2019 (8/4/19 – 8/31/19)	—	—	—	29,198,155
September 2019 (9/1/19 – 9/28/19)	—	—	—	29,198,155

(a) On November 4, 2014, the Board authorized a stock repurchase program of up to $75.0 million of the Company’s common stock.

Item 3. *Defaults upon Senior Securities.*

None.

Item 4. *Mine Safety Disclosures.*

Not applicable.

Item 5. *Other Information.*

Other Events

On October 31, 2019, the Company issued a press release announcing its financial results for the three and nine months ended September 30, 2019. The presentation slides for the third quarter 2019 earnings call were also posted on the Company’s website at that time. The full text of the third quarter financial results press release and earnings presentation are attached hereto as Exhibits 99.1 and 99.2, respectively, to this Form 10-Q.

Item 6. ***Exhibits.***

3.1	Restated Certificate of Incorporation of the Company. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed April 30, 2010.
3.2	Amended and Restated By-laws of the Company. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed February 9, 2016.
10.1	Second Amended and Restated Credit Agreement, dated as of July 30, 2019, by and among the Company, and certain of its foreign subsidiaries, as Borrowers, Wells Fargo Bank, National Association, as administrative agent, swingline lender and issuing lender, JPMorgan Chase Bank, as syndication agent, KeyBank National Association, PNC Bank, National Association and SunTrust Bank, as documentation agents, Wells Fargo Securities, LLC and JP Morgan Chase Bank, N.A., as joint lead arrangers and joint bookrunners, and the other lenders and parties thereto. Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the quarter ended June 30, 2019.
31.1	CEO Certification under Section 302 of the Sarbanes-Oxley Act.
31.2	CFO Certification under Section 302 of the Sarbanes-Oxley Act.
32.1	CEO Certification of Periodic Report under Section 906 of the Sarbanes-Oxley Act.
32.2	CFO Certification of Periodic Report under Section 906 of the Sarbanes-Oxley Act.
99.1	Third Quarter Financial Results Press Release, Dated October 31, 2019.
99.2	Third Quarter Earnings Call Presentation Slides.
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document.
101.CAL	Inline XBRL Taxonomy Calculation Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	Inline XBRL Taxonomy Label Linkbase Document.
101.PRE	Inline XBRL Taxonomy Presentation Linkbase Document.

SIGNATURE

Pursuant to the requirements of Section 13 or 15 (d) 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.

	Federal Signal Corporation
Date: October 31, 2019	/s/ Ian A. Hudson
	Ian A. Hudson
	Senior Vice President and Chief Financial Officer
	(Principal Financial Officer)

EXHIBIT 31.1

CEO Certification under Section 302 of the Sarbanes-Oxley Act

I, Jennifer L. Sherman, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Federal Signal Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)), for the registrant and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: October 31, 2019

/s/ Jennifer L. Sherman

Jennifer L. Sherman
President and Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2

CFO Certification under Section 302 of the Sarbanes-Oxley Act

I, Ian A. Hudson, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Federal Signal Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)), for the registrant and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: October 31, 2019

/s/ Ian A. Hudson

Ian A. Hudson

Senior Vice President and Chief Financial Officer

(Principal Financial Officer)

EXHIBIT 32.1

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

In connection with the Quarterly Report of Federal Signal Corporation (the “Company”) on Form 10-Q for the period ended September 30, 2019 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Jennifer L. Sherman, President and Chief Executive Officer of the Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (15 U.S.C. 78m or 78o (d)); and

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

Date: October 31, 2019

/s/ Jennifer L. Sherman
Jennifer L. Sherman
President and Chief Executive Officer
(*Principal Executive Officer)*

This certification accompanies the Report pursuant to § 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section. This certification shall also not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange act of 1934, as amended, except to the extent that the Company specifically incorporates it by reference.

EXHIBIT 32.2

**CERTIFICATION PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)**

In connection with the Quarterly Report of Federal Signal Corporation (the “Company”) on Form 10-Q for the period ended September 30, 2019 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Ian A. Hudson, Senior Vice President and Chief Financial Officer of the Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (15 U.S.C. 78m or 78o (d)); and

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

Date: October 31, 2019

/s/ Ian A. Hudson

Ian A. Hudson
Senior Vice President and Chief Financial Officer
(Principal Financial Officer)

This certification accompanies the Report pursuant to § 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section. This certification shall also not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange act of 1934, as amended, except to the extent that the Company specifically incorporates it by reference.

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FOR IMMEDIATE RELEASE

Federal Signal Raises Full-Year Outlook after Reporting Double-Digit Growth in Sales, Orders and Earnings in Outstanding Third Quarter

Oak Brook, Illinois, October 31, 2019 — Federal Signal Corporation (NYSE:FSS), a leader in environmental and safety solutions, today reported results for the third quarter ended September 30, 2019.

- Net sales of $309 million, up $39 million, or 15%, from last year
- Operating income of $38.6 million, up $8.2 million, or 27%, from last year
- GAAP EPS of $0.46, up $0.10, or 28%, from last year
- Adjusted EPS of $0.47, up $0.11, or 31%, from last year
- Orders of $329 million, up $61 million, or 23%, from last year
- Raising full-year adjusted EPS* outlook to a new range of $1.70 to $1.76, from the previous range of $1.64 to $1.72

Consolidated net sales for the third quarter were $308.8 million, up $39.4 million, or 15%, versus the same quarter a year ago. Net income for the third quarter was $28.4 million, equal to $0.46 per diluted share, compared to $21.7 million, equal to $0.36 per share, in the prior-year quarter.

The Company also reported adjusted net income for the third quarter of $28.9 million, equal to $0.47 per diluted share, up from $21.7 million, or $0.36 per diluted share, in the third quarter of last year. The Company is reporting adjusted results to facilitate comparisons of underlying performance on a year-over-year basis. A reconciliation of these and other non-GAAP measures is provided at the conclusion of this news release.

Impressive Q3 Results Reflect Significant Increases in Sales, Orders and Earnings

"Our third-quarter operating results benefited from seasonally-strong performance at many of our businesses," commented Jennifer L. Sherman, President and Chief Executive Officer. "Our third-quarter earnings also included the effects of a low tax rate, which added approximately $0.02 to our EPS, and better-than-expected accretion from MRL. With the team's intense focus on execution of our strategic initiatives and contributions from MRL, we reported double-digit growth in both net sales and orders, and our operating income was up 27% year-over-year. Each of our groups delivered improved adjusted EBITDA margin performance towards the high end of our target ranges, translating to a consolidated adjusted EBITDA margin in excess of 16%."

In the Environmental Solutions Group, net sales for the third quarter were $254.0 million, up $37.7 million, or 17%, compared to the prior-year quarter, while in the Safety and Security Systems Group, net sales of $54.8 million were up $1.7 million, or 3%.

Consolidated operating income for the third quarter was $38.6 million, up $8.2 million, or 27%, compared to the prior-year quarter, primarily driven by a $7.6 million increase within the Environmental Solutions Group. Consolidated operating margin was 12.5%, up from 11.3% in the prior-year quarter.

Consolidated adjusted earnings before interest, tax, depreciation and amortization ("adjusted EBITDA") for the third quarter was $49.8 million, up $10.1 million, or 25%, compared to the prior-year quarter, and consolidated adjusted EBITDA margin was 16.1%, compared to 14.7% last year.

Adjusted EBITDA in the Environmental Solutions Group was $46.0 million, up $9.3 million, or 25%, from the prior-year quarter, and its adjusted EBITDA margin was 18.1%, up from 17.0%. Within the Safety and Security Systems Group, adjusted EBITDA was $9.4 million, up $0.7 million, or 8%, from the prior-year quarter, and its adjusted EBITDA margin was 17.2%, up from 16.4%.

Consolidated orders for the third quarter were $328.8 million, up $60.7 million, or 23%, compared to the prior-year quarter, primarily due to order growth of $55.7 million, or 26%, within the Environmental Solutions Group. Consolidated backlog at September 30, 2019 was $367 million, up $46 million, or 14%, compared to last year.

New Credit Facility Further Strengthens Our Financial Position, Providing Additional Financial Flexibility to Fund Growth Opportunities

Net cash of $33 million was provided by operating activities during the third quarter, increasing year-to-date operating cash generation to $59 million. At September 30, 2019, consolidated debt was $249 million, total cash and cash equivalents were $36 million and the Company had $240 million of availability for borrowings under its new credit facility, which was executed during the third quarter.

“Despite some large cash outflows this quarter, which we had anticipated, our current financial position is stronger than ever,” said Sherman. “With the new credit facility that we executed during the quarter, our healthy cash generation, and our low debt leverage, we have significant financial flexibility to invest in organic growth initiatives and pursue strategic acquisitions, like MRL.”

The Company also funded dividends of $4.9 million during the third quarter, reflecting a dividend of $0.08 per share, and the Board of Directors recently declared a similar dividend that will be payable in the fourth quarter.

Outlook

“Our year-over-year organic order growth this quarter was $21 million, or 8%, driven by ongoing traction on our strategic initiatives and current favorable end-market conditions,” Sherman noted. “With our impressive third quarter results and the strength of our backlog, we are raising our 2019 adjusted EPS* outlook to a new range of $1.70 to $1.76, from a range of $1.64 to $1.72. The new range equates to a year-over-year improvement of between 21% and 25%.”

CONFERENCE CALL

Federal Signal will host its third quarter conference call on Thursday, October 31, 2019 at 10:00 a.m. Eastern Time. The call will last approximately one hour. The call may be accessed over the internet through Federal Signal’s website at www.federalsignal.com or by dialing phone number 1-877-705-6003 and entering the pin number 13695745. A replay will be available on Federal Signal’s website shortly after the call.

About Federal Signal

Federal Signal Corporation (NYSE: FSS) builds and delivers equipment of unmatched quality that moves material, cleans infrastructure, and protects the communities where we work and live. Founded in 1901, Federal Signal is a leading global designer, manufacturer and supplier of products and total solutions that serve municipal, governmental, industrial and commercial customers. Headquartered in Oak Brook, Ill., with manufacturing facilities worldwide, the Company operates two groups: Environmental Solutions and Safety and Security Systems. For more information on Federal Signal, visit: www.federalsignal.com.

“Safe Harbor” Statement under the Private Securities Litigation Reform Act of 1995

This release contains unaudited financial information and various forward-looking statements as of the date hereof and we undertake no obligation to update these forward-looking statements regardless of new developments or otherwise. Statements in this release that are not historical are forward-looking statements. Such statements are subject to various risks and uncertainties that could cause actual results to vary materially from those stated. Such risks and uncertainties include but are not limited to: economic conditions in various regions; product and price competition; supplier and raw material prices; risks associated with acquisitions such as integration of operations and achieving anticipated revenue and cost benefits; foreign currency exchange rate changes; interest rate changes; increased legal expenses and litigation results; legal and regulatory developments and other risks and uncertainties described in filings with the Securities and Exchange Commission.

Contact: Ian Hudson, Chief Financial Officer, +1-630-954-2000, ihudson@federalsignal.com

* Adjusted EPS is a non-GAAP measure, which includes certain adjustments to reported GAAP net income and diluted EPS. Our outlook assumes certain adjustments to exclude the impact of acquisition and integration-related expenses and purchase accounting effects, where applicable. In 2018, we also made adjustments to exclude the impact of hearing loss settlement charges and special tax items, where applicable. Should any similar items occur during 2019, we would expect to exclude them from the determination of adjusted EPS. However, because of the underlying uncertainty in quantifying amounts which may not yet be known, a reconciliation of our Adjusted EPS outlook to the most applicable GAAP measure is excluded based on the unreasonable efforts exception in Item 10(e)(1)(i)(B). In addition, to facilitate comparisons with prior periods, when reporting our interim and annual non-GAAP results in 2019, we are adjusting our previously-issued non-GAAP results for 2018 to exclude the recognition of a deferred gain, which will no longer occur in 2019 following the adoption of the new lease accounting standard. On this basis, Adjusted EPS for 2018 would have been $1.41. See Exhibit 99.1 to the Form 10-K for the year ended December 31, 2018 for the associated non-GAAP reconciliation.

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
(in millions, except per share data)	**2019**	**2018**	**2019**	**2018**
Net sales	$ 308.8	$ 269.4	$ 906.9	$ 810.1
Cost of sales	226.8	200.4	665.6	600.0
Gross profit	82.0	69.0	241.3	210.1
Selling, engineering, general and administrative expenses	43.0	38.2	128.7	120.7
Acquisition and integration-related expenses	0.4	0.4	1.9	1.3
Operating income	38.6	30.4	110.7	88.1
Interest expense	2.1	2.2	6.1	7.2
Other expense, net	0.2	—	0.5	0.5
Income before income taxes	36.3	28.2	104.1	80.4
Income tax expense	7.9	6.5	25.4	18.9
Net income	$ 28.4	$ 21.7	$ 78.7	$ 61.5
Earnings per share:				
Basic	$ 0.47	$ 0.36	$ 1.31	$ 1.03
Diluted	$ 0.46	$ 0.36	$ 1.28	$ 1.01
Weighted average common shares outstanding:				
Basic	60.2	60.0	60.1	59.9
Diluted	61.4	61.1	61.3	61.0
Cash dividends declared per common share	$ 0.08	$ 0.08	$ 0.24	$ 0.23
Operating data:				
Operating margin	12.5%	11.3%	12.2%	10.9%
Adjusted EBITDA	$ 49.8	$ 39.7	$ 142.8	$ 116.0
Adjusted EBITDA margin	16.1%	14.7%	15.7%	14.3%
Total orders	$ 328.8	$ 268.1	$ 935.8	$ 875.4
Backlog	366.9	320.6	366.9	320.6
Depreciation and amortization	10.8	9.4	30.1	27.0

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED BALANCE SHEETS

(in millions, except per share data)	September 30, 2019 (Unaudited)	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 35.9	$ 37.4
Accounts receivable, net of allowances for doubtful accounts of $2.4 and $1.6, respectively	142.5	124.4
Inventories	189.1	157.3
Prepaid expenses and other current assets	12.7	9.4
Total current assets	380.2	328.5
Properties and equipment, net of accumulated depreciation of $123.3 and $116.0, respectively	81.1	62.0
Rental equipment, net of accumulated depreciation of $42.1 and $30.0, respectively	111.7	96.6
Operating lease right-of-use assets	28.5	—
Goodwill	392.1	375.1
Intangible assets, net of accumulated amortization of $19.7 and $13.4, respectively	165.1	143.1
Deferred tax assets	10.4	12.5
Deferred charges and other long-term assets	4.1	5.6
Long-term assets of discontinued operations	0.4	0.4
Total assets	$ 1,173.6	$ 1,023.8
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term borrowings and finance lease obligations	$ 0.2	$ 0.2
Accounts payable	70.5	66.1
Customer deposits	12.7	10.1
Accrued liabilities:		
Compensation and withholding taxes	30.2	29.5
Other current liabilities	50.2	52.7
Current liabilities of discontinued operations	0.2	0.2
Total current liabilities	164.0	158.8
Long-term borrowings and finance lease obligations	249.1	209.9
Long-term operating lease liabilities	21.9	—
Long-term pension and other postretirement benefit liabilities	54.4	54.6
Deferred gain	—	6.8
Deferred tax liabilities	56.6	46.3
Other long-term liabilities	22.2	15.9
Long-term liabilities of discontinued operations	1.2	1.4
Total liabilities	569.4	493.7
Stockholders' equity:		
Common stock, $1 par value per share, 90.0 shares authorized, 66.9 and 66.4 shares issued, respectively	66.9	66.4
Capital in excess of par value	225.5	217.0
Retained earnings	503.2	432.5
Treasury stock, at cost, 6.4 and 6.2 shares, respectively	(92.6)	(88.5)
Accumulated other comprehensive loss	(98.8)	(97.3)
Total stockholders' equity	604.2	530.1
Total liabilities and stockholders' equity	$ 1,173.6	$ 1,023.8

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (Unaudited)

(in millions)	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
Operating activities:		
Net income	$ 78.7	$ 61.5
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	30.1	27.0
Deferred financing costs	0.3	0.3
Deferred gain	—	(1.4)
Stock-based compensation expense	5.9	5.8
Pension expense, net of funding	(0.1)	(7.6)
Changes in fair value of contingent consideration and deferred payment	0.8	0.8
Payments for acquisition-related activity	(3.1)	—
Deferred income taxes	8.6	1.8
Changes in operating assets and liabilities	(62.6)	(16.4)
Net cash provided by operating activities	58.6	71.8
Investing activities:		
Purchases of properties and equipment	(21.2)	(10.1)
(Payments for) proceeds from acquisition-related activity	(49.6)	3.0
Other, net	0.5	—
Net cash used for investing activities	(70.3)	(7.1)
Financing activities:		
Increase (decrease) in revolving lines of credit, net	37.5	(53.6)
Payments of debt financing fees	(1.0)	—
Purchases of treasury stock	(1.0)	—
Redemptions of common stock to satisfy withholding taxes related to stock-based compensation	(1.9)	(0.4)
Payments for acquisition-related activity	(10.3)	—
Cash dividends paid to stockholders	(14.5)	(13.8)
Proceeds from stock-based compensation activity	1.7	1.1
Other, net	—	0.1
Net cash provided by (used for) financing activities	10.5	(66.6)
Effects of foreign exchange rate changes on cash and cash equivalents	(0.3)	(0.6)
Decrease in cash and cash equivalents	(1.5)	(2.5)
Cash and cash equivalents at beginning of year	37.4	37.5
Cash and cash equivalents at end of period	$ 35.9	$ 35.0

FEDERAL SIGNAL CORPORATION AND SUBSIDIARIES

GROUP RESULTS (Unaudited)

The following tables summarize group operating results as of and for the three and nine months ended September 30, 2019 and 2018:

Environmental Solutions Group

	Three Months Ended September 30,			Nine Months Ended September 30,		
($ in millions)	**2019**	**2018**	**Change**	**2019**	**2018**	**Change**
Net sales	$ 254.0	$ 216.3	$ 37.7	$ 740.7	$ 646.2	$ 94.5
Operating income	35.9	28.3	7.6	106.4	86.1	20.3
Adjusted EBITDA	46.0	36.7	9.3	135.1	110.9	24.2
Operating data:						
Operating margin	14.1%	13.1%	1.0%	14.4%	13.3%	1.1%
Adjusted EBITDA margin	18.1%	17.0%	1.1%	18.2%	17.2%	1.0%
Total orders	$ 270.2	$ 214.5	$ 55.7	$ 767.1	$ 706.2	$ 60.9
Backlog	337.8	289.6	48.2	337.8	289.6	48.2
Depreciation and amortization	10.0	8.4	1.6	27.5	24.1	3.4

Safety and Security Systems Group

	Three Months Ended September 30,			Nine Months Ended September 30,		
($ in millions)	**2019**	**2018**	**Change**	**2019**	**2018**	**Change**
Net sales	$ 54.8	$ 53.1	$ 1.7	$ 166.2	$ 163.9	$ 2.3
Operating income	8.6	8.0	0.6	26.8	22.3	4.5
Adjusted EBITDA	9.4	8.7	0.7	29.3	24.5	4.8
Operating data:						
Operating margin	15.7%	15.1%	0.6%	16.1%	13.6%	2.5%
Adjusted EBITDA margin	17.2%	16.4%	0.8%	17.6%	14.9%	2.7%
Total orders	$ 58.6	$ 53.6	$ 5.0	$ 168.7	$ 169.2	$ (0.5)
Backlog	29.1	31.0	(1.9)	29.1	31.0	(1.9)
Depreciation and amortization	0.8	0.9	(0.1)	2.5	2.8	(0.3)

Corporate Expenses

Corporate operating expenses were $5.9 million and $5.9 million for the three months ended September 30, 2019 and 2018, respectively. For the nine months ended September 30, 2019 and 2018, corporate operating expenses were $22.5 million and $20.3 million, respectively.

SEC REGULATION G NON-GAAP RECONCILIATION

The financial measures presented below are unaudited and are not in accordance with U.S. generally accepted accounting principles ("GAAP"). The non-GAAP financial information presented herein should be considered supplemental to, and not a substitute for, or superior to, financial measures calculated in accordance with GAAP. The Company has provided this supplemental information to investors, analysts, and other interested parties to enable them to perform additional analyses of operating results, to illustrate the results of operations giving effect to the non-GAAP adjustments shown in the reconciliations below, and to provide an additional measure of performance which management considers in operating the business.

Impact of New Lease Accounting Standard on Non-GAAP Measures:

Effective January 1, 2019, the Company adopted the new lease accounting standard, which resulted in a change to the Company's recognition of the deferred gain associated with historical sale lease-back transactions. Prior to 2019, the deferred gain, which initially totaled $29.0 million, was being recognized through the Consolidated Statement of Operations on a straight-line basis over the 15-year lease term. As a result, approximately $1.9 million of the deferred gain had been recognized each year since 2008, of which approximately $1.1 million and $0.8 million had been recognized within the Environmental Solutions Group and Safety and Security Systems Group, respectively. Effective in 2019, the Company no longer recognizes any portion of the gain through the Consolidated Statement of Operations, and recognized the remaining deferred gain balance, net of the related deferred tax asset, as a cumulative effect adjustment to opening retained earnings. To facilitate comparisons with prior periods, we have revised our previously-issued non-GAAP results for the three and nine months ended September 30, 2018 to exclude the recognition of this deferred gain.

Adjusted Net Income and Earnings Per Share ("EPS"):

The Company believes that modifying its 2019 and 2018 net income and diluted EPS provides additional measures which are representative of the Company's underlying performance and improves the comparability of results across reporting periods. During the three and nine months ended September 30, 2019 and 2018 adjustments were made to reported GAAP net income and diluted EPS to exclude the impact of acquisition and integration-related expenses, purchase accounting effects and hearing loss settlement charges, where applicable.

(in millions)	Three Months Ended September 30, 2019	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
Net income	$ 28.4	$ 21.7	$ 78.7	$ 61.5
Add:				
Income tax expense	7.9	6.5	25.4	18.9
Income before income taxes	36.3	28.2	104.1	80.4
Add:				
Acquisition and integration-related expenses	0.4	0.4	1.9	1.3
Purchase accounting effects (a)	0.2	0.1	0.5	1.1
Hearing loss settlement charges	—	—	—	0.4
Adjusted income before income taxes	36.9	28.7	106.5	83.2
Adjusted income tax expense (b)	(8.0)	(6.6)	(25.9)	(19.5)
Adjusted net income	$ 28.9	$ 22.1	$ 80.6	$ 63.7
Less:				
Deferred gain recognition, net of income tax expense	—	(0.4)	—	(1.2)
Adjusted net income, as revised	$ 28.9	$ 21.7	80.6	62.5

(dollars per diluted share)	Three Months Ended September 30, 2019	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
EPS, as reported	$ 0.46	$ 0.36	$ 1.28	$ 1.01
Add:				
Income tax expense	0.13	0.10	0.41	0.31
Income before income taxes	0.59	0.46	1.69	1.32
Add:				
Acquisition and integration-related expenses	0.01	0.01	0.03	0.02
Purchase accounting effects (a)	0.00	0.00	0.01	0.02
Hearing loss settlement charges	—	—	—	0.00
Adjusted income before income taxes	0.60	0.47	1.73	1.36
Adjusted income tax expense (b)	(0.13)	(0.11)	(0.42)	(0.32)
Adjusted EPS	$ 0.47	$ 0.36	$ 1.31	$ 1.04
Less:				
Deferred gain recognition, net of income tax expense	—	0.00	—	(0.01)
Adjusted EPS, as revised	0.47	0.36	$ 1.31	$ 1.03

(a) Purchase accounting effects relate to adjustments to exclude the step-up in the valuation of acquired JJE equipment that was sold subsequent to the acquisition in the three and nine months ended September 30, 2019 and 2018, as well as to exclude the depreciation of the step-up in the valuation of the rental fleet acquired.

(b) Adjusted income tax expense for the three and nine months ended September 30, 2019 and 2018 was recomputed after excluding the impact of acquisition and integration-related expenses, purchase accounting effects and hearing loss settlement charges, where applicable.

Adjusted EBITDA and Adjusted EBITDA Margin:

The Company uses adjusted EBITDA and the ratio of adjusted EBITDA to net sales ("adjusted EBITDA margin"), at both the consolidated and segment level, as additional measures which are representative of its underlying performance and to improve the comparability of results across reporting periods. We believe that investors use versions of these metrics in a similar manner. For these reasons, the Company believes that adjusted EBITDA and adjusted EBITDA margin, at both the consolidated and segment level, are meaningful metrics to investors in evaluating the Company's underlying financial performance.

Consolidated adjusted EBITDA is a non-GAAP measure that represents the total of net income, interest expense, hearing loss settlement charges, acquisition and integration-related expenses, purchase accounting effects, other income/expense, income tax expense, and depreciation and amortization expense. Consolidated adjusted EBITDA margin is a non-GAAP measure that represents the total of net income, interest expense, hearing loss settlement charges, acquisition and integration-related expenses, purchase accounting effects, other income/expense, income tax expense, and depreciation and amortization expense divided by net sales for the applicable period(s).

Segment adjusted EBITDA is a non-GAAP measure that represents the total of segment operating income, acquisition and integration-related expenses, purchase accounting effects and depreciation and amortization expense, as applicable. Segment adjusted EBITDA margin is a non-GAAP measure that represents the total of segment operating income, acquisition and integration-related expenses, purchase accounting effects and depreciation and amortization expense, as applicable, divided by net sales for the applicable period(s). Segment operating income includes all revenues, costs and expenses directly related to the segment involved. In determining segment income, neither corporate nor interest expenses are included. Segment depreciation and amortization expense relates to those assets, both tangible and intangible, that are utilized by the respective segment.

Other companies may use different methods to calculate adjusted EBITDA and adjusted EBITDA margin.

Consolidated

The following table summarizes the Company's consolidated adjusted EBITDA and adjusted EBITDA margin and reconciles net income to consolidated adjusted EBITDA for the three and nine months ended September 30, 2019 and 2018:

	Three Months Ended September 30,		Nine Months Ended September 30,	
($ in millions)	**2019**	**2018**	**2019**	**2018**
Net income	$ 28.4	$ 21.7	$ 78.7	$ 61.5
Add:				
Interest expense	2.1	2.2	6.1	7.2
Hearing loss settlement charges	—	—	—	0.4
Acquisition and integration-related expenses	0.4	0.4	1.9	1.3
Purchase accounting effects*	—	—	0.1	0.7
Other expense, net	0.2	—	0.5	0.5
Income tax expense	7.9	6.5	25.4	18.9
Depreciation and amortization	10.8	9.4	30.1	27.0
Consolidated adjusted EBITDA	$ 49.8	$ 40.2	$ 142.8	$ 117.5
Less:				
Deferred gain recognition	—	(0.5)	$ —	$ (1.5)
Consolidated adjusted EBITDA, as revised	$ 49.8	$ 39.7	$ 142.8	$ 116.0
Net sales	$ 308.8	$ 269.4	$ 906.9	$ 810.1
Consolidated adjusted EBITDA margin	16.1%	14.9%	15.7%	14.5%
Consolidated adjusted EBITDA margin, as revised	16.1%	14.7%	15.7%	14.3%

** Excludes purchase accounting expenses reflected in depreciation and amortization of $0.2 million and $0.1 million for the three months ended September 30, 2019 and 2018, and $0.4 million and $0.4 million for the nine months ended September 30, 2019 and 2018, respectively.*

Environmental Solutions Group

The following table summarizes the Environmental Solutions Group's adjusted EBITDA and adjusted EBITDA margin and reconciles operating income to adjusted EBITDA for the three and nine months ended September 30, 2019 and 2018:

	Three Months Ended September 30,		Nine Months Ended September 30,	
($ in millions)	**2019**	**2018**	**2019**	**2018**
Operating income	$ 35.9	$ 28.3	$ 106.4	$ 86.1
Add:				
Acquisition and integration-related expenses	0.1	0.3	1.1	0.9
Purchase accounting effects*	—	—	0.1	0.7
Depreciation and amortization	10.0	8.4	27.5	24.1
Adjusted EBITDA	$ 46.0	$ 37.0	$ 135.1	$ 111.8
Less:				
Deferred gain recognition	—	(0.3)	—	(0.9)
Adjusted EBITDA, as revised	$ 46.0	$ 36.7	$ 135.1	$ 110.9
Net sales	$ 254.0	$ 216.3	$ 740.7	$ 646.2
Adjusted EBITDA margin	18.1%	17.1%	18.2%	17.3%
Adjusted EBITDA margin, as revised	18.1%	17.0%	18.2%	17.2%

** Excludes purchase accounting expenses reflected in depreciation and amortization of $0.2 million and $0.1 million for the three months ended September 30, 2019 and 2018, and $0.4 million and $0.4 million for the nine months ended September 30, 2019 and 2018, respectively.*

Safety and Security Systems Group

The following table summarizes the Safety and Security Systems Group's adjusted EBITDA and adjusted EBITDA margin and reconciles operating income to adjusted EBITDA for the three and nine months ended September 30, 2019 and 2018:

	Three Months Ended September 30,		Nine Months Ended September 30,	
($ in millions)	**2019**	**2018**	**2019**	**2018**
Operating income	$ 8.6	$ 8.0	$ 26.8	$ 22.3
Add:				
Depreciation and amortization	0.8	0.9	2.5	2.8
Adjusted EBITDA	$ 9.4	$ 8.9	$ 29.3	$ 25.1
Less:				
Deferred gain recognition	—	(0.2)	—	(0.6)
Adjusted EBITDA, as revised	$ 9.4	$ 8.7	$ 29.3	$ 24.5
Net sales	$ 54.8	$ 53.1	$ 166.2	$ 163.9
Adjusted EBITDA margin	17.2%	16.8%	17.6%	15.3%
Adjusted EBITDA margin, as revised	17.2%	16.4%	17.6%	14.9%