ASTRONICS CORP
Form 10-K/A
August 31, 2017
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K/A
(Amendment No.1)

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Fiscal Year Ended December 31, 2016
Commission File Number 0-7087

Astronics Corporation
(Exact Name of Registrant as Specified in its Charter)

New York	16-0959303
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

130 Commerce Way, East Aurora, N.Y. 14052
(Address of principal executive office)
Registrant's telephone number, including area code (716) 805-1599
Securities registered pursuant to Section 12(b) of the Act: None
Securities registered pursuant to Section 12(g) of the Act:
$.01 par value Common Stock; $.01 par value Class B Stock
(Title of Class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No x
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No x
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 x No ¨
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "large accelerated filer", an "accelerated filer", a "non-accelerated filer" and a "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer x	Accelerated filer ¨
Non-accelerated filer ¨	Smaller Reporting Company ¨

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

As of February 17, 2017, 29,097,719 shares were outstanding, consisting of 21,691,969 shares of Common Stock $.01 par value and 7,405,750 shares of Class B Stock $.01 par value. The aggregate market value, as of the last business day of the Company's most recently completed second fiscal quarter, of the shares of Common Stock and Class B Stock of Astronics Corporation held by non-affiliates was approximately $707,000,000 (assuming conversion of all of the outstanding Class B Stock into Common Stock and assuming the affiliates of the Registrant to be its directors, executive officers and persons known to the Registrant to beneficially own more than 10% of the outstanding capital stock of the Corporation).

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Company's Proxy Statement for the 2017 Annual Meeting of Shareholders to be held May 31, 2017 are incorporated by reference into Part III of this Report.

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EXPLANATORY NOTE

This Amendment No. 1 on Form 10-K/A (this "Amendment No. 1") amends Astronics Corporation's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 (the "Original Filing"). The purpose of this Amendment No.1 is to (i) revise the Report of Independent Registered Public Accounting Firm of Ernst & Young LLP (the "Auditor's Report") contained in Part II, Item 9A of the Original Filing regarding the effectiveness of our internal control over financial reporting and amend the Report of Independent Registered Public Accounting Firm of Ernst & Young LLP contained in Part 1, Item 8 of the Original Filing to reflect such revision of the Auditor's Report and (ii) revise the disclosure on the effectiveness of our disclosure controls and procedures and the disclosure on our internal control over financial reporting in Part II, Item 9A of the Original Filing to reflect management's conclusion that our internal control over financial reporting and disclosure controls and procedures were not effective at December 31, 2016 due to material weaknesses in our internal control over financial reporting identified subsequent to the issuance of the Original Filing.

Pursuant to Rule 12b-15 promulgated under the Securities Exchange Act of 1934, as amended, we have included the entire text of Part I, Item 8 of the Original Filing in this Amendment No. 1. However, there have been no changes to the text of such item other than the change stated in the immediately preceding paragraph and the addition of a subsequent event footnote (Note 19). Furthermore, there have been no changes to the XBRL data filed in Exhibit 101 of the Original Filing, except the addition of Note 19. Other than as described above and the inclusion with this Amendment No. 1 of new certifications by management, a new consent of Ernst & Young LLP, our independent registered public accounting firm, and related amendments to the List of Exhibits contained in Part IV, Item 15 of the Original Filing, this Amendment No. 1 speaks only as of the date of the Original Filing and does not amend, supplement or update any information contained in the Original Filing to give effect to any subsequent events. Accordingly, this Amendment No. 1 should be read in conjunction with the Original Filing and our reports filed with the U.S. Securities and Exchange Commission ("SEC") subsequent to the Original Filing.

PART II

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of Astronics Corporation

We have audited the accompanying consolidated balance sheets of Astronics Corporation as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2016. Our audits also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Astronics Corporation at December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Astronics Corporation’s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 23, 2017, except for the effect of the material weaknesses described in the sixth paragraph of that report, as to which the date is August 31, 2017, expressed an adverse opinion thereon.

/s/ Ernst & Young LLP

Buffalo, New York
February 23, 2017, except for Note 19,
as to which the date is August 31, 2017

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rule 13a-15(f) and 15d-15(f) of the Exchange Act. Under the supervision and with the participation of our management, including the Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2016 based upon the framework in Internal Control – Integrated Framework originally issued in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In Management's Report on Internal Control over Financial Reporting included in our original Annual Report on Form 10-K for the year-ended December 31, 2016, our management, under the supervision of our Chief Executive Officer and Chief Financial Officer, concluded that we maintained effective internal control over financial reporting as of December 31, 2016. Subsequently, our management identified a material weakness in our internal control over financial reporting concerning the design of information technology change controls over a report writing application. Additionally, management identified deficiencies in certain review controls over the financial statement consolidation process, which when aggregated along with the information technology change controls matter described above, aggregate to a material weakness over the financial statement close process as of December 31, 2016.

As a result, management has concluded that we did not maintain effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria described above. Management therefore has restated its report on internal control over financial reporting.

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in this Annual Report on Form 10-K and, as part of their audit, has issued their report, included herein, on the effectiveness of our internal control over financial reporting.

By:	/s/ Peter J. Gundermann Peter J. Gundermann President & Chief Executive Officer (Principal Executive Officer)	August 31, 2017
	/s/ David C. Burney David C. Burney Executive Vice President and Chief Financial Officer (Principal Financial Officer)	August 31, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of Astronics Corporation

We have audited Astronics Corporation’s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Astronics Corporation’s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management’s Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company’s internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company’s internal control over financial reporting is a process designed 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. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our report dated February 23, 2017, we expressed an unqualified opinion that Astronics Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria. Management has subsequently identified a material weakness in its internal control over financial reporting concerning the design of information technology change controls over a report writing application,. Additionally, management identified deficiencies in certain review controls over the financial statement consolidation process, which when aggregated along with the information technology change controls matter described above, aggregate to a material weakness over the financial statement close process as of December 31, 2016. As a result, management has revised its assessment, as presented in the accompanying Management's Report on Internal Control over Financial Reporting; to conclude that Astronics Corporation's internal control over financial reporting was not effective as of December 31, 2016. Accordingly, our present opinion on the effectiveness of Astronics Corporation's internal control over financial reporting as of December 31, 2016, as expressed herein, is different from that expressed in our previous report.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weaknesses have been identified and included in management's assessment. Management identified a material weakness in internal control over financial reporting concerning the design of information technology change controls over a report writing application. Additionally, management identified deficiencies in certain review controls over the financial statement consolidation process, which when aggregated along with the information technology change controls matter described above, aggregate to a material weakness over the financial statement close process as of December 31, 2016. We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Astronics Corporation as of December 31, 2016 and 2015 and the related consolidated statements of operations, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2016. These material weaknesses were considered in determining the nature, timing and extent of audit tests applied in our audit of the 2016 consolidated financial statements, and this report does not affect our report dated February 23, 2017, except for Note 19, as to which the date is August 31, 2017, which expressed an unqualified opinion on those financial statements.

In our opinion, because of the effect of the material weaknesses described above on the achievement of the objectives of the control criteria, Astronics Corporation has not maintained effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

/s/ Ernst & Young LLP

Buffalo, New York
February 23, 2017, except for the effect of the material weaknesses
described in the sixth paragraph above, as to which the date
is August 31, 2017

ASTRONICS CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
(In thousands, except per share data)	2016	2015	2014
Sales	$633,123	$692,279	$661,039
Cost of Products Sold	473,656	504,337	493,997
Gross Profit	159,467	187,942	167,042
Selling, General and Administrative Expenses	86,328	89,141	79,680
Income from Operations	73,139	98,801	87,362
Interest Expense, Net of Interest Income	4,354	4,751	8,255
Income Before Income Taxes	68,785	94,050	79,107
Provision for Income Taxes	20,361	27,076	22,937
Net Income	$48,424	$66,974	$56,170
Basic Earnings Per Share	$1.66	$2.29	$1.96
Diluted Earnings Per Share	$1.61	$2.22	$1.87

See notes to consolidated financial statements.

ASTRONICS CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
(In thousands)	2016	2015	2014
Net Income	$48,424	$66,974	$56,170
Other Comprehensive (Loss) Income:			
Foreign Currency Translation Adjustments	(626)	(4,617)	(4,638)
Mark to Market Adjustments for Derivatives – Net of Tax	—	—	69
Retirement Liability Adjustment – Net of Tax	196	1,502	(3,769)
Other Comprehensive (Loss) Income	(430)	(3,115)	(8,338)
Comprehensive Income	$47,994	$63,859	$47,832

See notes to consolidated financial statements.

ASTRONICS CORPORATION
CONSOLIDATED BALANCE SHEETS

	December 31,	
(In thousands, except share and per share data)	2016	2015
ASSETS		
Current Assets:		
Cash and Cash Equivalents	$17,901	$18,561
Accounts Receivable, Net of Allowance for Doubtful Accounts	109,415	95,277
Inventories	116,597	115,467
Prepaid Expenses and Other Current Assets	11,160	20,662
Total Current Assets	255,073	249,967
Property, Plant and Equipment, at Cost:		
Land	11,112	11,145
Buildings and Improvements	79,191	78,989
Machinery and Equipment	93,683	89,514
Construction in Progress	8,182	3,282
	192,168	182,930
Less Accumulated Depreciation	69,356	58,188
Net Property, Plant and Equipment	122,812	124,742
Other Assets	13,149	10,889
Intangible Assets, Net of Accumulated Amortization	98,103	108,276
Goodwill	115,207	115,369
Total Assets	$604,344	$609,243
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current Liabilities:		
Current Maturities of Long-term Debt	$2,636	$2,579
Accounts Payable	25,070	27,138
Accrued Payroll and Employee Benefits	24,743	24,036
Accrued Income Taxes	62	195
Other Accrued Expenses	10,881	11,527
Customer Advanced Payments and Deferred Revenue	23,168	38,757
Total Current Liabilities	86,560	104,232
Long-term Debt	145,484	167,210
Supplemental Retirement Plan and Other Liabilities for Pension Benefits	22,140	20,935
Other Liabilities	1,414	1,674
Deferred Income Taxes	11,297	14,967
Total Liabilities	266,895	309,018
Shareholders' Equity:		
Common Stock, $.01 par value, Authorized 40,000,000 Shares		
21,955,414 Shares Issued and 21,432,282 Outstanding at December 31, 2016	220	194
19,348,678 Shares Issued and Outstanding at December 31, 2015		
Convertible Class B Stock, $.01 par value, Authorized 10,000,000 Shares		
7,665,437 Shares Issued and Outstanding at December 31, 2016	77	100
10,055,904 Shares Issued and Outstanding at December 31, 2015		
Additional Paid-in Capital	64,752	57,827
Accumulated Other Comprehensive Loss	(15,494)	(15,064)
Retained Earnings	305,512	257,168
Treasury Stock; 523,132 Shares in 2016	(17,618)	—
Total Shareholders' Equity	337,449	300,225
Total Liabilities and Shareholders' Equity	$604,344	$609,243

See notes to consolidated financial statements.

ASTRONICS CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
(In thousands)	2016	2015	2014
Cash Flows from Operating Activities			
Net Income	$48,424	$66,974	$56,170
Adjustments to Reconcile Net Income to Cash Provided By Operating Activities, Excluding the Effects of Acquisitions:			
Depreciation and Amortization	25,790	25,309	27,254
Provision for Non-Cash Losses on Inventory and Receivables	2,404	3,187	1,959
Stock Compensation Expense	2,281	2,274	1,730
Deferred Tax Benefit	(4,756)	(252)	(4,677)
Non-cash Adjustment to Contingent Consideration	—	(1,751)	(4,971)
Other	165	(294)	268
Cash Flows from Changes in Operating Assets and Liabilities, net of the Effects from Acquisitions of Businesses:			
Accounts Receivable	(14,622)	(729)	(18,850)
Inventories	(2,671)	(2,537)	25,732
Prepaid Expenses and Other Current Assets	108	(799)	(2,806)
Accounts Payable	(2,000)	(2,168)	(8,005)
Accrued Expenses	(174)	3,738	6,826
Income Taxes Payable	7,926	(9,266)	(4,084)
Customer Advanced Payments and Deferred Revenue	(15,539)	(7,485)	22,055
Supplemental Retirement Plan and Other Liabilities	1,518	2,300	1,273
Cash Provided By Operating Activities	48,854	78,501	99,874
Cash Flows from Investing Activities			
Acquisition of Business, Net of Cash Acquired	—	(52,276)	(68,201)
Capital Expenditures	(13,037)	(18,641)	(40,882)
Other	(1,585)	(2,669)	(37)
Cash Used For Investing Activities	(14,622)	(73,586)	(109,120)
Cash Flows from Financing Activities			
Proceeds From Long-term Debt	20,000	55,000	245,894
Principal Payments on Long-term Debt	(41,835)	(67,694)	(275,544)
Purchase of Outstanding Shares for Treasury	(17,618)	—	—
Debt Acquisition Costs	—	—	(573)
Proceeds from Exercise of Stock Options	3,813	2,996	1,848
Excess Tax Benefit from Exercise of Stock Options	834	2,973	5,262
Cash Used For Financing Activities	(34,806)	(6,725)	(23,113)
Effect of Exchange Rates on Cash	(86)	(826)	(1,079)
Decrease in Cash and Cash Equivalents	(660)	(2,636)	(33,438)
Cash and Cash Equivalents at Beginning of Year	18,561	21,197	54,635
Cash and Cash Equivalents at End of Year	$17,901	$18,561	$21,197
Supplemental Cash Flow Information:			
Interest Paid	$4,536	$4,734	$7,816
Income Taxes Paid, Net of Refunds	$15,898	$32,990	$26,619

See notes to consolidated financial statements.

ASTRONICS CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

	Year Ended December 31,		
(In thousands)	2016	2015	2014
Common Stock			
Beginning of Year	$194	$166	$133
Exercise of Stock Options and Stock Compensation Expense – Net of Taxes	1	2	2
Class B Stock Converted to Common Stock	25	26	31
End of Year	$220	$194	$166
Convertible Class B Stock			
Beginning of Year	$100	$124	$152
Exercise of Stock Options and Stock Compensation Expense – Net of Taxes	2	2	3
Class B Stock Converted to Common Stock	(25)	(26)	(31)
End of Year	$77	$100	$124
Additional Paid in Capital			
Beginning of Year	$57,827	$49,588	$40,720
Exercise of Stock Options and Stock Compensation Expense - Net of Taxes	6,925	8,239	8,868
End of Year	$64,752	$57,827	$49,588
Accumulated Other Comprehensive Loss			
Beginning of Year	$(15,064)	$(11,949)	$(3,611)
Foreign Currency Translation Adjustments	(626)	(4,617)	(4,638)
Mark to Market Adjustments for Derivatives – Net of Taxes	—	—	69
Retirement Liability Adjustment – Net of Taxes	196	1,502	(3,769)
End of Year	$(15,494)	$(15,064)	$(11,949)
Retained Earnings			
Beginning of Year	$257,168	$190,248	$134,115
Net income	48,424	66,974	56,170
Cash Paid in Lieu of Fractional Shares from Stock Distribution	(80)	(54)	(37)
End of Year	$305,512	$257,168	$190,248
Treasury Stock			
Beginning of Year	$—	$—	$—
Purchase of Shares	(17,618)	—	—
Retirement of Treasury Shares	—	—	—
End of Year	$(17,618)	$—	$—
Total Shareholders' Equity	$337,449	$300,225	$228,177

See notes to consolidated financial statements

ASTRONICS CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY, COUNTINUED

	Year Ended December 31,		
(Share data, in thousands)	2016	2015	2014
Common Stock			
Beginning of Year	19,349	16,608	13,268
Exercise of Stock Options	151	168	216
Class B Stock Converted to Common Stock	2,455	2,573	3,124
End of Year	21,955	19,349	16,608
Convertible Class B Stock			
Beginning of Year	10,055	12,447	15,287
Exercise of Stock Options	65	181	284
Class B Stock Converted to Common Stock	(2,455)	(2,573)	(3,124)

End of Year	7,665	10,055	12,447
Treasury Stock			
Beginning of Year	—	—	—
Purchase of Shares	523	—	—
End of Year	523	—	—

See notes to consolidated financial statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1 — SUMMARY OF SIGNIFICANT ACCOUNTING PRINCIPLES AND PRACTICES

Description of the Business

Astronics Corporation (“Astronics” or the “Company”) is a leading supplier of products to the global aerospace, defense, electronics and semiconductor industries. Our products and services include advanced, high-performance electrical power generation, distribution and motion systems, lighting and safety systems, avionics products, systems certification, aircraft structures and automated test systems.

We have operations in the United States (“U.S.”), Canada and France. We design and build our products through our wholly owned subsidiaries Astronics Advanced Electronic Systems Corp. (“AES”); Astronics AeroSat Corporation (“AeroSat”); Armstrong Aerospace, Inc. (“Armstrong”); Astronics Test Systems, Inc. (“ATS”); Ballard Technology, Inc. (“Ballard”); Astronics DME LLC (“DME”); Luminescent Systems, Inc. (“LSI”); Luminescent Systems Canada, Inc. (“LSI Canada”); Max-Viz, Inc. (“Max-Viz”); Peco, Inc. (“Peco”); and PGA Electronic s.a. (“PGA”).

On January 14, 2015, the Company acquired 100% of the equity of Armstrong for approximately $52.3 million in cash. Armstrong, located in Itasca, Illinois, is a leading provider of engineering, design and certification solutions for commercial aircraft, specializing in connectivity, in-flight entertainment, and electrical power systems. Armstrong is included in our Aerospace segment.

At December 31, 2016, the Company has two reportable segments, Aerospace and Test Systems. The Aerospace segment designs and manufactures products for the global aerospace industry. Our Test Systems segment designs, develops, manufactures and maintains automated test systems that support the semiconductor, aerospace, communications and weapons test systems as well as training and simulation devices for both commercial and military applications.

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All intercompany transactions and balances have been eliminated.

Acquisitions are accounted for under the acquisition method and, accordingly, the operating results for the acquired companies are included in the consolidated statements of operations from the respective dates of acquisition.

For additional information on the acquired businesses, see Note 18.

Revenue Recognition

The vast majority of our sales agreements are for standard products and services, with revenue recognized on the accrual basis at the time of shipment of goods, transfer of title and customer acceptance, where required. There are no significant contracts allowing for right of return. To a limited extent, as a result of the acquisition of ATS, certain of our contracts involve multiple elements (such as equipment and service). Service revenues were not material for the years ended December 31, 2016, 2015 and 2014. The Company recognizes revenue for delivered elements when they have stand-alone value to the customer, they have been accepted by the customer, and for which there are only customary refund or return rights. Arrangement consideration is allocated to the deliverables by use of the relative selling price method. The selling price used for each deliverable is based on vendor-specific objective evidence (“VSOE”) if available, third party-evidence (“TPE”) if VSOE is not available, or estimated selling price if neither VSOE nor TPE is available. Estimated selling price is determined in a manner consistent with that used to establish the price to sell the deliverable on a standalone basis.

For prepaid service contracts, sales revenue is recognized on a straight-line basis over the term of the contract, unless historical evidence indicates the costs are incurred on other than a straight-line basis.

Revenue of approximately $20.7 million, $17.2 million and $2.7 million for the years ended December 31, 2016, 2015 and 2014, respectively, was recognized from long-term, fixed-price contracts using the percentage-of-completion method of accounting, measured by multiplying the estimated total contract value by the ratio of actual contract costs incurred to date to the estimated total contract costs. The Company makes significant estimates involving its usage of percentage-of-completion accounting to recognize contract revenues. The Company periodically reviews contracts in process for estimates-to-completion, and revises estimated gross profit accordingly. While the Company believes its estimated gross profit on contracts in process is reasonable, unforeseen events and changes in circumstances can take place in a subsequent accounting period that may cause

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the Company to revise its estimated gross profit on one or more of its contracts in process. Accordingly, the ultimate gross profit realized upon completion of such contracts can vary significantly from estimated amounts between accounting periods. For contracts with anticipated losses at completion, a charge is taken against income for the amount of the entire loss in the period in which it is estimated.

Cost of Products Sold, Engineering and Development and Selling, General and Administrative Expenses

Cost of products sold includes the costs to manufacture products such as direct materials and labor and manufacturing overhead as well as all engineering and developmental costs. The Company is engaged in a variety of engineering and design activities as well as basic research and development activities directed to the substantial improvement or new application of the Company's existing technologies. These costs are expensed when incurred and included in cost of products sold. Research and development, design and related engineering amounted to $90.2 million in 2016, $90.1 million in 2015 and $76.7 million in 2014. Selling, general and administrative ("SG&A") expenses include costs primarily related to our sales, marketing and administrative departments.

Shipping and Handling

Shipping and handling costs are expensed as incurred and are included in costs of products sold.

Stock Distribution

On September 26, 2016, the Company announced a three-for-twenty distribution of Class B Stock to holders of both Common and Class B Stock. Stockholders received three shares of Class B Stock for every twenty shares of Common and Class B Stock held on the record date of October 11, 2016. Fractional shares were paid in cash. All share quantities, share prices and per share data reported throughout this report have been adjusted to reflect the impact of this distribution.

Equity-Based Compensation

The Company accounts for its stock options following Accounting Standards Codification ("ASC") Topic 718, Compensation – Stock Compensation ("ASC Topic 718"). This Topic requires all equity-based payments to employees, including grants of employee stock options, to be recognized in the statement of earnings based on the grant date fair value of the award. For awards with graded vesting, the Company uses a straight-line method of attributing the value of stock-based compensation expense, subject to minimum levels of expense, based on vesting.

Under ASC Topic 718, stock compensation expense recognized during the period is based on the value of the portion of share-based payment awards that is ultimately expected to vest during the period. Vesting requirements vary for directors, officers and key employees. In general, options granted to outside directors vest six months from the date of grant and options granted to officers and key employees vest with graded vesting over a five-year period, 20% each year, from the date of grant.

Cash and Cash Equivalents

All highly liquid instruments with a maturity of three months or less at the time of purchase are considered cash equivalents.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are composed of trade and contract receivables recorded at either the invoiced amount or costs in excess of billings, are expected to be collected within one year, and do not bear interest. The Company will record a valuation allowance to account for potentially uncollectible accounts receivable. The allowance is determined based on our knowledge of the business, specific customers, review of the receivables' aging and a specific identification of accounts where collection is at risk. Account balances are charged against the allowance after all means of collections have been exhausted and recovery is considered remote. The Company typically does not require collateral.

Inventories

Inventories are stated at the lower of cost or market, cost being determined in accordance with the first-in, first-out method or standard cost. The Company records valuation reserves to provide for excess, slow moving or obsolete inventory. In determining the appropriate reserve, the Company considers the age of inventory on hand, the overall inventory levels in relation to forecasted demands as well as reserving for specifically identified inventory that the Company believes is no longer salable.

Property, Plant and Equipment

Depreciation of property, plant and equipment is computed using the straight-line method for financial reporting purposes and using accelerated methods for income tax purposes. Estimated useful lives of the assets are as follows: buildings, 25-40 years; machinery and equipment, 4-10 years. Leased buildings and associated leasehold improvements are amortized over the shorter of the terms of the lease or the estimated useful lives of the assets, with the amortization of such assets included within depreciation expense.

The cost of properties sold or otherwise disposed of and the accumulated depreciation thereon are eliminated from the accounts and the resulting gain or loss, as well as maintenance and repair expenses, is reflected in income. Replacements and improvements are capitalized.

Depreciation expense was approximately $14.3 million, $13.3 million and $10.6 million in 2016, 2015 and 2014, respectively.

Buildings acquired under capital leases amounted to $10.5 million ($14.3 million, net of $3.8 million of accumulated amortization) and $12.3 million ($14.8 million, net of $2.5 million accumulated amortization) at December 31, 2016 and 2015, respectively. Future minimum lease payments associated with these capital leases are expected to be $2.6 million in 2017, $2.6 million in 2018, $2.0 million in 2019, $2.1 million in 2020 and $2.2 million in 2021.

Long-Lived Assets

Long-lived assets to be held and used are initially recorded at cost. The carrying value of these assets is evaluated for recoverability whenever adverse effects or changes in circumstances indicate that the carrying amount may not be recoverable. Impairments are recognized if future undiscounted cash flows from operations are not expected to be sufficient to recover long-lived assets. The carrying amounts are then reduced to fair value, which is typically determined by using a discounted cash flow model.

Goodwill

The Company tests goodwill at the reporting unit level on an annual basis or more frequently if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. The Company has ten reporting units, however only eight reporting units have goodwill and were subject to the goodwill impairment test. The annual testing date for the impairment test is as of the first day of our fourth quarter. We may elect to perform a qualitative assessment that considers economic, industry and company-specific factors for all or selected reporting units. If, after completing the assessment, it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying value, we proceed to a quantitative test. We may also elect to perform a quantitative test instead of a qualitative test for any or all of our reporting units.

Quantitative testing requires a comparison of the fair value of each reporting unit to its carrying value. We use the discounted cash flow method to estimate the fair value of our reporting units. The discounted cash flow method incorporates various assumptions, the most significant being projected revenue growth rates, operating margins and cash flows, the terminal growth rate and the weighted average cost of capital. If the carrying value of the reporting unit exceeds its fair value, goodwill is considered impaired and any loss must be measured. To determine the amount of the impairment loss, the implied fair value of goodwill is determined by assigning a fair value to all of the reporting unit's assets and liabilities, including any unrecognized intangible assets, as if the reporting unit had been acquired in a business combination at fair value. If the carrying amount of the reporting unit goodwill exceeds the implied fair value of that goodwill, an impairment loss would be recognized in an amount equal to that excess.

There were no impairment charges in 2016, 2015 or 2014.

Intangible Assets

Acquired intangibles are generally valued based upon future economic benefits such as earnings and cash flows. Acquired identifiable intangible assets are recorded at fair value and are amortized over their estimated useful lives. Acquired intangible assets with an indefinite life are not amortized, but are reviewed for impairment at least annually or more frequently whenever events or changes in circumstances indicate that the carrying amounts of those assets are below their estimated fair values.

Impairment is tested under ASC Topic 350, Intangibles - Goodwill and Other, as amended by Accounting Standards Update ("ASU") 2012-2, by first performing a qualitative analysis in a manner similar to the testing methodology of goodwill discussed previously. The qualitative factors applied under this new provision indicated no impairment to the Company's indefinite lived intangible assets in 2016, 2015 or 2014.

Financial Instruments

The Company's financial instruments consist primarily of cash and cash equivalents, accounts receivable, accounts payable, notes payable and long-term debt. The Company performs periodic credit evaluations of its customers' financial condition and generally does not require collateral. The Company does not hold or issue financial instruments for trading purposes. Due to their short-term nature, the carrying values of cash and equivalents, accounts receivable, accounts payable, and notes payable approximate fair value. The carrying value of the Company's variable rate long-term debt instruments also approximates fair value due to the variable rate feature of these instruments.

Derivatives

The accounting for changes in the fair value of derivatives depends on the intended use and resulting designation. The Company's use of derivative instruments was limited to cash flow hedges for interest rate risk associated with long-term debt. All such instruments were terminated in 2014. Interest rate swaps were used to adjust the proportion of total debt that is subject to variable and fixed interest rates. The interest rate swaps were designated as hedges of the amount of future cash flows related to interest payments on variable-rate debt that, in combination with the interest payments on the debt, converted a portion of the variable-rate debt to fixed-rate debt. The Company recorded all derivatives on the balance sheet at fair value. The related gains or losses, to the extent the derivatives were effective as a hedge, were deferred in shareholders' equity as a component of Accumulated Other Comprehensive Income (Loss) ("AOCI") and reclassified into earnings at the time interest expense was recognized on the associated long-term debt. Any ineffectiveness was recorded in the Consolidated Statements of Operations.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent liabilities and the reported amounts of revenues and expenses during the reporting periods in the financial statements and accompanying notes. Actual results could differ from those estimates.

Foreign Currency Translation

The Company accounts for its foreign currency translation in accordance with ASC Topic 830, Foreign Currency Translation. The aggregate transaction gain included in operations was insignificant in 2016, $1.0 million in 2015 and insignificant in 2014.

Dividends

The Company has not paid any cash dividends in the three-year period ended December 31, 2016.

Loss Contingencies

Loss contingencies may from time to time arise from situations such as claims and other legal actions. Loss contingencies are recorded as liabilities when it is probable that a liability has been incurred and the amount of the loss is reasonably estimable. Disclosure is required when there is a reasonable possibility that the ultimate loss will exceed the recorded provision. Contingent liabilities are often resolved over long time periods. In recording liabilities for probable losses, management is required to make estimates and judgments regarding the amount or range of the probable loss. Management continually assesses the adequacy of estimated loss contingencies and, if necessary, adjusts the amounts recorded as better information becomes known.

Acquisitions

The Company accounts for its acquisitions under ASC Topic 805, Business Combinations and Reorganizations ("ASC Topic 805"). ASC Topic 805 provides guidance on how the acquirer recognizes and measures the consideration transferred, identifiable assets acquired, liabilities assumed, non-controlling interests, and goodwill acquired in a business combination. ASC Topic 805 also expands required disclosures surrounding the nature and financial effects of business combinations. See Note 18 regarding the acquisitions in 2015 and 2014.

Newly Adopted and Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-9, Revenue from Contracts with Customers. This new standard is effective for reporting periods beginning after December 15, 2017, pursuant to the issuance of ASU 2015-14, Revenue from Contracts with Customers: Deferral of Effective Date issued in August 2015. The comprehensive new standard will supersede existing revenue recognition guidance and require revenue to be recognized when promised goods or services are transferred to customers in amounts that reflect the consideration to which the company expects to be entitled in exchange for those goods or services. Adoption of the new rules could affect the timing of revenue recognition for certain transactions. The guidance permits two implementation approaches, one requiring retrospective application of the new standard with restatement of prior years and one requiring prospective application of the new standard with disclosure of results under old standards. The Company will adopt the new standard on January 1, 2018, using the modified retrospective transition method.

The adoption of this amendment may require us to accelerate the recognition of revenue as compared to current standards, for certain customers, in cases where we produce products unique to those customers; and for which we would have an enforceable right of payment for production completed to date. The Company has identified its revenue streams, reviewed the initial impacts of adopting the new standard on those revenue streams, and appointed a project management leader. The Company continues to evaluate the quantitative and qualitative impacts of the standard.

In February 2016, the FASB issued ASU No. 2016 - 02, Leases. The new standard is effective for reporting periods beginning after December 15, 2018. Early adoption is permitted. The standard will require lessees to report most leases as assets and liabilities on the balance sheet, while lessor accounting will remain substantially unchanged. The standard requires a modified retrospective transition approach for existing leases, whereby the new rules will be applied to the earliest year presented. The adoption of the standard is not expected to have a material effect on the Company's financial position, results of operations or cash flows.

In March 2016, the FASB issued ASU No. 2016-09, Improvements to Employee Share-Based Payment Accounting. The new standard is effective for reporting periods beginning after December 15, 2016 and early adoption is permitted. With respect to income taxes, under current guidance, when a share-based payment award such as a stock option is granted to an employee, the fair value of the award is generally recognized over the vesting period. However, the related deduction from taxes payable is based on the award's intrinsic value at the time of exercise, which can be either greater (creating an excess tax benefit) or less (creating a tax deficiency) than the compensation cost recognized in the financial statements. Excess tax benefits are currently recognized in additional paid-in capital ("APIC") within equity, deficiencies are first recorded to APIC to the extent previously recognized excess tax benefits exist, after which time deficiencies are recorded to income tax expense. Under the new guidance, all excess tax benefits/deficiencies would be recognized as income tax benefit/expense in the statement of income. The new ASU's income tax aspects also impact the calculation of diluted earnings per share by excluding excess tax benefits/deficiencies from the calculation of assumed proceeds available to repurchase shares under the treasury stock method. Relative to forfeitures, the new standard provides an accounting policy election to account for forfeitures as they occur. Additionally, cash flows related to excess tax benefits will be included in Net cash provided by operating activities and will no longer be separately classified as a financing activity. Finally, the new ASU also allows a company to repurchase more of an employee's shares for tax withholding purposes. The Company will adopt the new standard on January 1, 2017, and will account for forfeitures as they occur.

In August 2016, the FASB issued ASU No. 2016-15, Classification of Certain Cash Receipts and Cash Payments, which is intended to reduce diversity in practice in how certain cash receipts and payments are presented and classified in the statement of cash flows. The standard provides guidance in a number of situations including, among others, settlement of zero-coupon bonds, contingent consideration payments made after a business combination, proceeds from the settlement of insurance claims, and distributions received from equity method investees. The ASU also provides guidance for classifying cash receipts and payments that have aspects of more than one class of cash flows. This ASU is effective for fiscal years beginning after December 15, 2017, with early adoption permitted. The standard requires application using a retrospective transition method. This ASU is not expected to have a material impact on the Company's consolidated results of operations and financial condition.

In January 2017, the FASB issued ASU No. 2017-01, Clarifying the Definition of a Business, which narrows the existing definition of a business and provides a framework for evaluating whether a transaction should be accounted for as an acquisition (or disposal) of assets or a business. The ASU requires an entity to evaluate if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets; if so, the set of transferred assets and activities (collectively, the set) is not a business. To be considered a business, the set would need to include an input and a substantive process that together significantly contribute to the ability to create outputs. The standard also narrows the definition of outputs. The definition of a business affects areas of accounting such as acquisitions, disposals and goodwill. Under the new guidance, fewer acquired sets are expected to be considered businesses. This ASU is effective for

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fiscal years beginning after December 15, 2017 on a prospective basis with early adoption permitted. The Company would apply this guidance to applicable transactions after the adoption date.

In January 2017, the FASB issued ASU No. 2017-04, Simplifying the Test for Goodwill Impairment. Under the new standard, goodwill impairment would be measured as the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying value of goodwill. This ASU eliminates existing guidance that requires an entity to determine goodwill impairment by calculating the implied fair value of goodwill by hypothetically assigning the fair value of a reporting unit to all of its assets and liabilities as if that reporting unit had been acquired in a business combination. This ASU is effective prospectively to annual and interim impairment tests beginning after December 15, 2019, with early adoption permitted. The Company plans to early adopt on January 1, 2017.

NOTE 2 — ACCOUNTS RECEIVABLE

Accounts receivable at December 31 consists of:

(In thousands)	2016	2015
Trade Accounts Receivable	$93,823	$87,282
Unbilled Recoverable Costs and Accrued Profits	16,194	8,307
Total Receivables	110,017	95,589
Less Allowance for Doubtful Accounts	(602)	(312)
	$109,415	$95,277

NOTE 3 — INVENTORIES

Inventories at December 31 are as follows:

(In thousands)	2016	2015
Finished Goods	$28,792	$27,770
Work in Progress	20,790	23,977
Raw Material	67,015	63,720
	$116,597	$115,467

At December 31, 2016, the Company's reserve for inventory valuation was $15.4 million, or 11.7% of gross inventory. At December 31, 2015, the Company's reserve for inventory valuation was $14.6 million, or 11.2% of gross inventory.

NOTE 4 — INTANGIBLE ASSETS

The following table summarizes acquired intangible assets as follows:

		December 31, 2016		December 31, 2015	
(In thousands)	Weighted Average Life	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Patents	4 Years	$2,146	$ 1,450	$2,146	$ 1,264
Noncompete Agreement	3 Years	2,500	979	2,500	479
Trade Names	7 Years	10,189	3,153	10,217	2,216
Completed and Unpatented Technology	6 Years	24,118	9,221	24,056	6,795
Backlog	-	11,224	11,224	11,202	10,793
Customer Relationships	12 Years	97,046	23,093	96,472	16,770
Total Intangible Assets	6 Years	$147,223	$ 49,120	$146,593	$ 38,317

Amortization is computed on the straight-line method for financial reporting purposes, with the exception of backlog, which is amortized based on the expected realization period of the acquired backlog. Amortization expense for intangibles was $10.8 million, $11.3 million and $15.8 million for 2016, 2015 and 2014, respectively.

Based upon acquired intangible assets at December 31, 2016, amortization expense for each of the next five years is estimated to be:

(In thousands)	
2017	$10,445
2018	10,133
2019	9,754
2020	9,198
2021	9,152

NOTE 5 — GOODWILL

The following table summarizes the changes in the carrying amount of goodwill for 2016 and 2015:

(In thousands)	2016	2015
Balance at Beginning of the Year	$115,369	$100,153
Acquisition	—	16,237
Foreign Currency Translations and Other	(162)	(1,021)
Balance at End of the Year	$115,207	$115,369
Goodwill - Gross	$131,749	$131,911
Accumulated Impairment Losses	(16,542)	(16,542)
Goodwill - Net	$115,207	$115,369

As discussed in Note 1, goodwill is not amortized but is periodically tested for impairment. For the eight reporting units with goodwill on the first day of our fourth quarter, the Company performed a quantitative assessment of the goodwill's carrying value. The assessment indicated no impairment to the carrying value of goodwill in any of the Company's reporting units and no impairment charge was recognized. There was no impairment to the carrying value of goodwill in 2015 or 2014. All goodwill relates to the Aerospace segment.

NOTE 6 — LONG-TERM DEBT AND NOTES PAYABLE

Long-term debt consists of the following:

(In thousands)	2016	2015
Revolving Credit Line issued under the Fourth Amended and Restated Credit Agreement dated September 26, 2014. Interest is at LIBOR plus between 1.375% and 2.25% (2.27% at December 31, 2016).	$136,000	$155,000
Other Bank Debt	1,270	1,963
Capital Lease Obligations	10,850	12,826
	148,120	169,789
Less Current Maturities	2,636	2,579
	$145,484	$167,210

Principal maturities of long-term debt are approximately:

(In thousands)	
2017	$2,636
2018	2,610
2019	1,835
2020	2,096
2021	138,049
Thereafter	894
	$148,120

The Company’s obligations under the Credit Agreement as amended are jointly and severally guaranteed by each domestic subsidiary of the Company other than a non-material subsidiary. The obligations are secured by a first priority lien on substantially all of the Company’s and the guarantors’ assets.

The Company's Third Amended and Restated Credit Agreement provided for a $75 million five-year revolving credit facility and a $190 million five-year term loan, both expiring on June 30, 2018. The facilities carried an interest rate of LIBOR plus between 2.25% and 3.50%, depending on the Company’s leverage ratio as defined in the Credit Agreement. In addition, the Company was required to pay a commitment fee of between 0.25% and 0.50% on the unused portion of the total credit commitment for the preceding quarter, based on the Company’s leverage ratio under the credit agreement.

On February 28, 2014, in connection with the funding of the acquisition of ATS, the Company amended its existing credit facility to exercise its option to increase the revolving credit commitment. The credit agreement provided for a $125 million, five-year revolving credit facility maturing on June 30, 2018, of which $58.0 million was drawn to finance the acquisition. In addition, the Company was required to pay a commitment fee quarterly at a rate of between 0.25% and 0.50% per annum on the unused portion of the total revolving credit commitment, based on the Company’s leverage ratio.

On September 26, 2014, the Company modified and extended its existing credit facility (the “Original Facility”) by entering into the Fourth Amended and Restated Credit Agreement (the “Credit Agreement”). On the closing date, there were $180.5 million of term loans outstanding and $6 million of revolving loans outstanding under the Original Facility. Pursuant to the Agreement, the Original Facility was replaced with a $350 million revolving credit line with the option to increase the line by up to $150 million. The outstanding balances in the Original Facility were rolled into the Agreement on the date of entry. In addition, the maturity date of the loans under the Agreement was extended to September 26, 2019. The credit facility allocates up to $20 million of the $350 million revolving credit line for the issuance of letters of credit, including certain existing letters of credit. At December 31, 2016, outstanding letters of credit totaled $1.1 million.

On January 13, 2016, the Company amended the Agreement to add a new lender and extend the maturity date of the credit facility from September 26, 2019 to January 13, 2021.

Covenants in the Agreement were modified to where the maximum permitted leverage ratio of funded debt to Adjusted EBITDA (as defined in the Agreement) is 3.5 to 1, increasing to 4.0 to 1 for up to two fiscal quarters following the closing of an acquisition permitted under the Agreement. The Company will pay interest on the unpaid principal amount of the facility at a rate equal to one-, three- or six-month LIBOR plus between 1.375% and 2.25% based upon the Company’s leverage ratio. The Company will also pay a commitment fee to the Lenders in an amount equal to between 0.175% and 0.35% on the undrawn portion of the credit facility, based upon the Company’s leverage ratio. The Company is required to maintain a minimum interest coverage ratio (Adjusted EBITDA to interest expense) of 3.0 to 1 for the term of the Agreement. The Company’s interest coverage ratio was 29.5 to 1 at December 31, 2016. The Company’s leverage ratio was 1.38 to 1 at December 31, 2016. The Company is in compliance with all financial and other covenants at December 31, 2016.

In the event of voluntary or involuntary bankruptcy of the Company or any subsidiary, all unpaid principal and other amounts owing under the Credit Agreement automatically become due and payable. Other events of default, such as failure to make payments as they become due and breach of financial and other covenants, change of control, judgments over a certain amount, and cross default under other agreements give the Agent the option to declare all such amounts immediately due and payable.

NOTE 7 — WARRANTY

In the ordinary course of business, the Company warrants its products against defects in design, materials and workmanship typically over periods ranging from twelve to sixty months. The Company determines warranty reserves needed by product line based on experience and current facts and circumstances. Activity in the warranty accrual, which is included in other accrued expenses on the Consolidated Balance Sheets, is summarized as follows:

(In thousands)	2016	2015	2014
Balance at Beginning of the Year	$5,741	$4,884	$2,796
Warranty Liabilities Acquired	—	500	564
Warranties Issued	2,281	4,039	3,431
Reassessed Warranty Exposure	(966)	(485)	(34)
Warranties Settled	(2,381)	(3,197)	(1,873)
Balance at End of the Year	$4,675	$5,741	$4,884

NOTE 8 — INCOME TAXES

The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial reporting and tax basis of assets and liabilities. Deferred tax assets are reduced, if deemed necessary, by a valuation allowance for the amount of tax benefits which are not expected to be realized. Investment tax credits are recognized on the flow through method.

The provision (benefit) for income taxes consists of the following:

(In thousands)	2016	2015	2014
Current			
U.S. Federal	$21,667	$24,809	$22,705
State	2,899	2,382	3,797
Foreign	551	137	1,112
Deferred			
U.S. Federal	(2,871)	703	(3,035)
State	(1,140)	(1,019)	(655)
Foreign	(745)	64	(987)
	$20,361	$27,076	$22,937

The effective tax rates differ from the statutory federal income tax rate as follows:

	2016	2015	2014
Statutory Federal Income Tax Rate	35.0 %	35.0 %	35.0 %
Permanent Items			
Non-deductible Stock Compensation Expense	1.1 %	0.6 %	0.6 %
Domestic Production Activity Deduction	(3.3)%	(2.9)%	(2.6)%
Other	0.2 %	0.2 %	0.1 %
Foreign Tax Benefits	(1.1)%	(1.1)%	(1.7)%
State Income Tax, Net of Federal Income Tax Effect	1.8 %	0.9 %	2.6 %
Research and Development Tax Credits	(3.7)%	(2.7)%	(4.3)%
Other	(0.4)%	(1.2)%	(0.7)%
Effective Tax Rate	29.6 %	28.8 %	29.0 %

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

No provision has been made for U.S. federal or foreign taxes on that portion of certain foreign subsidiaries' undistributed earnings ($13.1 million at December 31, 2016) considered to be permanently reinvested. It is not practicable to determine the amount of tax that would be payable if these amounts were repatriated to the U.S.

Significant components of the Company's deferred tax assets and liabilities as of December 31, are as follows:

(In thousands)	2016	2015
Deferred Tax Assets:		
Asset Reserves	$9,208	$8,709
Deferred Compensation	8,378	7,986
Capital Lease Basis Difference	1,690	1,753
State Investment and Research and Development Tax Credit Carryforwards, Net of Federal Tax	665	533
Customer Advanced Payments and Deferred Revenue	3,750	1,722
State Net Operating Loss Carryforwards and Other	4,282	2,401
Total Gross Deferred Tax Assets	27,973	23,104
Valuation Allowance for State Deferred Tax Assets and Tax Credit Carryforwards, Net of Federal Tax	(3,816)	(2,640)
Deferred Tax Assets	24,157	20,464
Deferred Tax Liabilities:		
Depreciation	12,972	12,561
Goodwill and Intangible Assets	18,558	20,113
Other	1,280	1,199
Deferred Tax Liabilities	32,810	33,873
Net Deferred Tax Liabilities	$(8,653)	$(13,409)

The net deferred tax assets and liabilities presented in the Consolidated Balance Sheets are as follows at December 31:

(In thousands)	2016	2015
Other Assets — Long-term	$2,644	$1,558
Deferred Tax Liabilities — Long-term	(11,297)	(14,967)
Net Deferred Tax Liabilities	$(8,653)	$(13,409)

At December 31, 2016, state tax credit carryforwards amounted to approximately $1.0 million, of which $0.8 million will expire from 2017 through 2030 and $0.2 million will carryforward until utilized. At December 31, 2016, state net operating loss carryforwards which the Company expects to utilize amounted to approximately $8.2 million and expire at various dates between 2032 and 2034.

Due to the uncertainty as to the Company's ability to generate sufficient taxable income in certain states in the future and utilize certain of the Company's state operating loss carryforwards before they expire, the Company has recorded a valuation allowance accordingly. These state net operating loss carryforwards amount to approximately $52.9 million and expire at various dates from 2021 through 2035. The excess tax benefits associated with stock option exercises are recorded directly to shareholders' equity only when realized and amounted to approximately $0.8 million, $3.0 million and $5.3 million for the years ended December 31, 2016, 2015, and 2014 respectively.

The Company has analyzed its filing positions in all of the federal and state jurisdictions where it is required to file income tax returns, as well as all open tax years in these jurisdictions. Should the Company need to accrue a liability for uncertain tax benefits, any interest associated with that liability would be recorded as interest expense. Penalties, if any, would be recorded as operating expenses. As of December 31, 2016, we no longer have any unrecognized tax benefits. Reserves for uncertain tax positions that had been recorded pursuant to ASC Topic 740-10 as of December 31, 2014 were reversed during the year-ended December 31, 2015. No additional reserves for uncertain income tax positions were deemed necessary for the year ended December 31, 2016. A reconciliation of the total amounts of unrecognized tax benefits, excluding interest and penalties which are insignificant, is as follows:

(in thousands)	2016	2015	2014
Balance at Beginning of the Year	$ —	$181	$1,940
Decreases as a Result of Tax Positions Taken in Prior Years	—	(181)	(1,901)
Increases as a Result of Tax Positions Taken in the Current Year	—	—	142
Balance at End of the Year	$ —	$—	$181

There are no penalties or interest liabilities accrued as of December 31, 2016 or 2015, nor are any material penalties or interest costs included in expense for each of the years ended December 31, 2016, 2015 and 2014. The years under which we conducted our evaluation coincided with the tax years currently still subject to examination by major federal and state tax jurisdictions, those being 2013 through 2016 for federal purposes and 2012 through 2016 for state purposes.

Pretax income from the Company's foreign subsidiaries amounted to $1.6 million, $3.6 million and $4.3 million for 2016, 2015 and 2014, respectively. The balance of pretax earnings for each of those years were domestic.

NOTE 9 — PROFIT SHARING/401(k) PLAN

The Company offers eligible domestic full-time employees participation in certain profit sharing/401(k) plans. The plans provide for a discretionary annual company contribution. In addition, employees may contribute a portion of their salary to the plans which is partially matched by the Company. The plans may be amended or terminated at any time.

Total charges to income before income taxes for these plans were approximately $6.7 million, $6.3 million and $5.1 million in 2016, 2015 and 2014, respectively.

NOTE 10 — RETIREMENT PLANS AND RELATED POST RETIREMENT BENEFITS

The Company has two non-qualified supplemental retirement defined benefit plans ("SERP" and "SERP II") for certain current and retired executive officers. The accumulated benefit obligation of the plans as of December 31, 2016 and 2015 amounts to $18.6 million and $16.7 million, respectively.

The Plans provide for benefits based upon average annual compensation and years of service and in the case of SERP, there are offsets for social security and profit sharing benefits. It is the Company's intent to fund the plans as plan benefits become payable, since no assets exist at December 31, 2016 or 2015 for either of the plans.

The Company accounts for the funded status (i.e., the difference between the fair value of plan assets and the projected benefit obligations) of its pension plans in accordance with the recognition and disclosure provisions of ASC Topic 715, Compensation, Retirement Benefits, which requires the Company to recognize the funded status in its balance sheet, with a corresponding adjustment to AOCI, net of tax. These amounts will be subsequently recognized as net periodic pension cost pursuant to the Company's historical policy for amortizing such amounts. Further, actuarial gains and losses that arise in subsequent periods and are not recognized as net periodic pension cost in the same periods will be recognized as a component of AOCI. Those amounts will be subsequently recognized as a component of net periodic pension cost on the same basis as the amounts recognized in AOCI.

Unrecognized prior service costs of $2.5 million ($3.9 million net of $1.4 million in taxes) and unrecognized actuarial losses of $4.0 million ($6.1 million net of $2.1 million in taxes) are included in AOCI at December 31, 2016 and have not yet been recognized in net periodic pension cost. The prior service cost included in AOCI that is expected to be recognized in net periodic pension cost during the fiscal year-ended December 31, 2017 is $0.3 million ($0.4 million net of $0.1 million in taxes). The actuarial loss included in AOCI expected to be recognized in net periodic pension cost during the fiscal year-ended December 31, 2016 is $0.3 million ($0.4 million net of $0.1 million in taxes).

The reconciliation of the beginning and ending balances of the projected benefit obligation of the plans for the years ended December 31 is as follows:

(In thousands)	2016	2015
Funded Status		
Projected Benefit Obligation		
Beginning of the Year — January 1	$20,418	$20,990
Service Cost	173	194
Interest Cost	901	843
Actuarial (Gain) Loss	389	(1,261)
Benefits Paid	(348)	(348)
End of the Year — December 31	$21,533	$20,418

The assumptions used to calculate the projected benefit obligation as of December 31 are as follows:

	2016	2015
Discount Rate	4.20%	4.45%
Future Average Compensation Increases	3.00% – 5.00%	3.00% – 5.00%

The plans are unfunded at December 31, 2016 and are recognized in the accompanying Consolidated Balance Sheets as a current accrued pension liability of $0.3 million and a long-term accrued pension liability of $21.2 million. This also is the expected future contribution to the plan, since the plan is unfunded.

The following table summarizes the components of the net periodic cost for the years ended December 31:

(In thousands)	2016	2015	2014
Net Periodic Cost			
Service Cost — Benefits Earned During Period	$173	$194	$247
Interest Cost	901	843	721
Amortization of Prior Service Cost	413	495	495
Amortization of Losses	343	449	108
Net Periodic Cost	$1,830	$1,981	$1,571

The assumptions used to determine the net periodic cost are as follows:

	2016	2015	2014
Discount Rate	4.45%	4.05%	5.10%
Future Average Compensation Increases	3.00% – 5.00%	5.00%	5.00%

The Company expects the benefits to be paid in each of the next five years to be $0.3 million and $2.3 million in the aggregate for the next five years after that. This also is the expected Company contribution to the plans.

Participants in SERP are entitled to paid medical, dental and long-term care insurance benefits upon retirement under the plan. The measurement date for determining the plan obligation and cost is December 31.

The reconciliation of the beginning and ending balances of the accumulated postretirement benefit obligation for the years ended December 31, is as follows:

(In thousands)	2016	2015
Funded Status		
Accumulated Postretirement Benefit Obligation		
Beginning of the Year — January 1	$925	$990
Service Cost	5	6
Interest Cost	40	39
Actuarial (Gain) Loss	112	(54)
Benefits Paid	(61)	(56)
End of the Year — December 31	$1,021	$925

The assumptions used to calculate the accumulated post-retirement benefit obligation as of December 31 are as follows:

	2016	2015
Discount Rate	4.20%	4.45%

The following table summarizes the components of the net periodic cost for the years ended December 31:

(In thousands)	2016	2015	2014
Net Periodic Cost			
Service Cost — Benefits Earned During Period	$ 5	$ 6	$ 3
Interest Cost	40	39	31
Amortization of Prior Service Cost	24	26	25
Amortization of Losses	22	26	—
Net Periodic Cost	$ 91	$ 97	$ 59

The assumptions used to determine the net periodic cost are as follows:

	2016	2015	2014
Discount Rate	4.45%	4.05%	5.10%
Future Average Healthcare Benefit Increases	5.72%	5.32%	5.48%

Unrecognized prior service costs of $0.1 million and unrecognized actuarial losses of $0.3 million for medical, dental and long-term care insurance benefits (net of taxes of $0.2 million) are included in AOCI at December 31, 2016 and have not been recognized in net periodic cost. The Company estimates that the prior service costs and net losses in AOCI as of December 31, 2016 that will be recognized as components of net periodic benefit cost during the year ended December 31, 2017 for the Plan will be insignificant. For measurement purposes, a 5.3% and 6.2% increase in the cost of health care benefits was assumed for 2017 and 2018, respectively, and a range between 4.6% and 6.3% from 2019 through 2070. A one percentage point increase or decrease in this rate would change the post retirement benefit obligation by approximately $0.1 million. The plan is recognized in the accompanying Consolidated Balance Sheets as a current accrued pension liability of less than $0.1 million and a long-term accrued pension liability of $0.9 million. The Company expects the benefits to be paid in each of the next five years to be less than $0.1 million per year and approximately $0.3 million in the aggregate for the next five years after that. This also is the expected Company contribution to the plan, as it is unfunded.

The Company is a participating employer in a trustee-managed multiemployer defined benefit pension plan for employees who participate in collective bargaining agreements. The plan generally provides retirement benefits to employees based on years of service to the Company. Contributions are based on the hours worked and are expensed on a current basis. The Plan is 91.7% funded as of January 1, 2016. The Company’s contributions to the plan were $1.1 million in 2016, $1.0 million in 2015 and $0.9 million in 2014. These contributions represent less than 1% of total contributions to the plan.

NOTE 11 — SHAREHOLDERS' EQUITY

Share Buyback Program

On February 24, 2016, the Company's Board of Directors authorized the repurchase of up to $50 million of common stock (the "Buyback Program"). The Buyback Program allows the Company to purchase shares of its common stock in accordance with applicable securities laws on the open market or through privately negotiated transactions. The Buyback Program may be suspended or discontinued at any time. Under this program the Company has repurchased approximately 523,000 shares for $17.6 million.

Reserved Common Stock

At December 31, 2016, approximately 11.4 million shares of common stock were reserved for issuance upon conversion of the Class B stock, exercise of stock options and purchases under the Employee Stock Purchase Plan. Class B Stock is identical to Common Stock, except Class B Stock has ten votes per share, is automatically converted to Common Stock on a one-for-one basis when sold or transferred other than via gift, devise or bequest and cannot receive dividends unless an equal or greater amount of dividends is declared on Common Stock.

Comprehensive Income and Accumulated Other Comprehensive Income (Loss)

Comprehensive income consists of net income and the after-tax impact of currency translation adjustments, mark to market adjustments for derivatives and retirement liability adjustments. Income taxes related to derivatives and retirement liability adjustments within other comprehensive income are generally recorded based on an effective tax rate of approximately 35%. No income tax effect is recorded for currency translation adjustments.

The components of accumulated other comprehensive income (loss) are as follows:

(In thousands)	2016	2015
Foreign Currency Translation Adjustments	$(8,597)	$(7,971)
Retirement Liability Adjustment – Before Tax	(10,611)	(10,912)
Tax Benefit	3,714	3,819
Retirement Liability Adjustment – After Tax	(6,897)	(7,093)
Accumulated Other Comprehensive Loss	$(15,494)	$(15,064)

The components of other comprehensive income (loss) are as follows:

(In thousands)	2016	2015	2014
Foreign Currency Translation Adjustments	$(626)	$(4,617)	$(4,638)
Reclassification to Interest Expense	—	—	103
Mark to Market Adjustments for Derivatives	—	—	4
Tax Expense	—	—	(38)
Mark to Market Adjustments for Derivatives	—	—	69
Retirement Liability Adjustment	301	2,311	(5,800)
Tax Benefit (Expense)	(105)	(809)	2,031
Retirement Liability Adjustment	196	1,502	(3,769)
Other Comprehensive (Loss) Income	$(430)	$(3,115)	$(8,338)

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NOTE 12 — EARNINGS PER SHARE

Earnings per share computations are based upon the following table:

	2016	2015	2014
(In thousands, except per share data)			
Net Income	$48,424	$66,974	$56,170
Basic Earnings Weighted Average Shares	29,163	29,245	28,716
Net Effect of Dilutive Stock Options	869	934	1,254
Diluted Earnings Weighted Average Shares	30,032	30,179	29,970
Basic Earnings Per Share	$1.66	$2.29	$1.96
Diluted Earnings Per Share	$1.61	$2.22	$1.87

The above information has been adjusted to reflect the impact of the three-for-twenty distribution of Class B Stock for shareholders of record on October 11, 2016.

Stock options with exercise prices greater than the average market price of the underlying common shares are excluded from the computation of diluted earnings per share because they are out-of-the-money and the effect of their inclusion would be anti-dilutive. The number of common shares covered by out-of-the-money stock options was approximately 0.2 million at December 31, 2016, 0.1 million at December 31, 2015 and were insignificant at December 31, 2014.

NOTE 13 — STOCK OPTION AND PURCHASE PLANS

The Company has stock option plans that authorize the issuance of options for shares of Common Stock to directors, officers and key employees. Stock option grants are designed to reward long-term contributions to the Company and provide incentives for recipients to remain with the Company. The exercise price, determined by a committee of the Board of Directors, may not be less than the fair market value of the Common Stock on the grant date. Options become exercisable over periods not exceeding ten years. The Company’s practice has been to issue new shares upon the exercise of the options.

Stock compensation expense recognized during the period is based on the value of the portion of share-based payment awards that is ultimately expected to vest during the period. Vesting requirements vary for directors, officers and key employees. In general, options granted to outside directors vest six months from the date of grant and options granted to officers and key employees straight line vest over a five-year period from the date of grant.

	2016	2015	2014
Weighted Average Fair Value of the Options Granted	$16.85	$18.00	$19.35

The weighted average fair value for these options was estimated at the date of grant using a Black-Scholes option pricing model with the following weighted-average assumptions:

	2016	2015	2014
Risk-free Interest Rate	1.08% – 2.34%	1.36% – 2.10%	0.12% – 2.30%
Dividend Yield	—%	—%	—%
Volatility Factor	0.40 – 0.45	0.40 – 0.51	0.42 – 0.52
Expected Life in Years	4.0 – 8.0	4.0 – 8.0	4.0 – 8.0

To determine expected volatility, the Company uses historical volatility based on weekly closing prices of its Common Stock and considers currently available information to determine if future volatility is expected to differ over the expected terms of the options granted. The risk-free rate is based on the U.S. Treasury yield curve at the time of grant for the appropriate term of the options granted. Expected dividends are based on the Company’s history and expectation of dividend payouts. The expected term of stock options is based on vesting schedules, expected exercise patterns and contractual terms.

The following table provides compensation expense information based on the fair value of stock options for the years ended December 31, 2016, 2015 and 2014:

(In thousands)	2016	2015	2014
Stock Compensation Expense	$2,281	$2,274	$1,730
Tax Benefit	(145)	(177)	(122)
Stock Compensation Expense, Net of Tax	$2,136	$2,097	$1,608

A summary of the Company's stock option activity and related information for the years ended December 31 is as follows:

	2016			2015			2014		
(Aggregate intrinsic value in thousands)	Options	Weighted Average Exercise Price	Aggregate Intrinsic Value	Options	Weighted Average Exercise Price	Aggregate Intrinsic Value	Options	Weighted Average Exercise Price	Aggregate Intrinsic Value
Outstanding at January 1	1,444,954	$ 12.61	$30,675	1,686,178	$ 9.43	$43,778	2,237,325	$ 6.58	$78,846
Options Granted	104,900	$ 34.29	$(48)	105,742	$ 35.80	$(42)	97,641	$ 36.63	$506
Options Exercised	(188,768)	$ 7.20	$(5,029)	(346,966)	$ 4.25	$(10,808)	(644,058)	$ 3.63	$(24,599)
Options Forfeited	(22,813)	$ 25.96	$(180)	—	$ —	$—	(4,730)	$ 11.44	$(144)
Outstanding at December 31	1,338,273	$ 14.85	$25,418	1,444,954	$ 12.61	$32,928	1,686,178	$ 9.43	$54,609
Exercisable at December 31	1,091,561	$ 11.03	$24,898	1,167,040	$ 9.20	$30,576	1,371,614	$ 6.58	$48,331

The aggregate intrinsic value in the preceding table represents the total pretax option holder's intrinsic value, based on the Company's closing stock price of Common Stock which would have been received by the option holders had all option holders exercised their options as of that date. The Company's closing stock price of Common Stock was $33.84, $35.40 and $41.83 as of December 31, 2016, 2015 and 2014, respectively.

The weighted average fair value of options vested during 2016, 2015 and 2014 was $12.05, $10.85 and $6.13, respectively. The total fair value of options that vested during the year amounted to $1.4 million, $1.5 million and $1.2 million for the years ended December 31, 2016, 2015 and 2014, respectively. At December 31, 2016, total compensation costs related to non-vested awards not yet recognized amounts to $5.2 million and will be recognized over a weighted average period of 2.4 years.

The following is a summary of weighted average exercise prices and contractual lives for outstanding and exercisable stock options as of December 31, 2016:

	Outstanding			Exercisable		
Exercise Price Range	Shares	Weighted Average Remaining Life in Years	Weighted Average Exercise Price	Shares	Weighted Average Remaining Life in Years	Weighted Average Exercise Price
$ 3.04 - $ 4.45	471,841	2.5	$ 3.29	471,841	2.5	$ 3.29
$ 5.77 - $ 6.35	45,166	0.5	6.01	45,166	0.5	6.01
$ 8.83 - $15.68	459,138	4.6	11.73	431,370	4.5	11.81
$ 26.09 - $41.19	342,288	8.5	33.93	123,344	7.9	33.05
$ 52.77 - $52.77	19,840	8.2	52.77	19,840	8.2	52.77
	1,338,273	4.8	14.85	1,091,561	3.9	11.03

The Company established Incentive Stock Option Plans for the purpose of attracting and retaining executive officers and key employees, and to align management's interest with those of the shareholders. Generally, the options must be exercised within ten years from the grant date and vest ratably over a five-year period. The exercise price for the options is equal to the share price at the date of grant. At December 31, 2016, the Company had options outstanding for 1,117,799 shares under the plans. At December 31, 2016, there were 616,752 options available for future grant under the plan established in 2011.

The Company established the Directors Stock Option Plans for the purpose of attracting and retaining the services of experienced and knowledgeable outside directors, and to align their interest with those of the shareholders. The options must be exercised within ten years from the grant date. The exercise price for the option is equal to the share price at the date of grant and vests six months from the grant date. At December 31, 2016, the Company had options outstanding for 220,474 shares under the plans. At December 31, 2016, there were 172,288 options available for future grant under the plan established in 2005.

In addition to the options discussed above, the Company has established the Employee Stock Purchase Plan to encourage employees to invest in Astronics Corporation. The plan provides employees the opportunity to invest up to the IRS annual maximum of approximately $21,250 in Astronics common stock at a price equal to 85% of the fair market value of the Astronics common stock, determined each October 1. Employees are allowed to enroll annually. Employees indicate the number of shares they wish to obtain through the program and their intention to pay for the shares through payroll deductions over the annual cycle of October 1 through September 30. Employees can withdraw anytime during the annual cycle, and all money withheld from the employees pay is returned with interest. If an employee remains enrolled in the program, enough money will have been withheld from the employees' pay during the year to pay for all the shares that the employee opted for under the program. At December 31, 2016, employees had subscribed to purchase 108,995 shares at $33.09 per share. The weighted average fair value of the options was approximately $9.88, $6.93 and $8.40 for options granted during the year ended December 31, 2016, 2015 and 2014, respectively.

The fair value for the options granted under the Employee Stock Purchase Plan was estimated at the date of grant using a Black-Scholes option pricing model with the following weighted-average assumptions:

	2016	2015	2014
Risk-free Interest Rate	0.63%	0.31%	0.10%
Dividend Yield	— %	— %	— %
Volatility Factor	0.45	0.40	0.42
Expected Life in Years	1.0	1.0	1.0

NOTE 14 — FAIR VALUE

ASC Topic 820, Fair value Measurements and Disclosures, ("ASC Topic 820") defines fair value, establishes a framework for measuring fair value and expands the related disclosure requirements. This statement applies under other accounting pronouncements that require or permit fair value measurements. The statement indicates, among other things, that a fair value measurement assumes that the transaction to sell an asset or transfer a liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. ASC Topic 820 defines fair value based upon an exit price model. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment, and involves consideration of factors specific to the asset or liability.

ASC Topic 820 establishes a valuation hierarchy for disclosure of the inputs to valuation used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows:

Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument.

Level 3 inputs are unobservable inputs based on our own assumptions used to measure assets and liabilities at fair value.

On a Recurring Basis:

A financial asset or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement. The financial liabilities carried at fair value measured on a recurring basis consisted of contingent consideration related to certain prior acquisitions, valued at zero at December 31, 2016 and 2015, recorded within Other Liabilities. The values were determined using Level 3 inputs. There were no financial assets carried at fair value measured on a recurring basis at December 31, 2016 or 2015. The amounts recorded for the contingent considerations were calculated using an estimate of the probability of the future cash outflows. The varying contingent payments were then discounted to the present value utilizing a discounted cash flow methodology. The contingent consideration liabilities have no observable Level 1 or Level 2 inputs. The change in the balance of contingent consideration during fiscal 2015 was primarily due to fair value adjustments of $1.8 million resulting from the re-evaluation of the probability of the achievement of the contingent consideration targets. There was a similar adjustment of $5.0 million in fiscal 2014. These adjustments were recorded within SG&A expenses in the Consolidated Statements of Operations.

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On a Non-recurring Basis:
In accordance with the provisions of ASC Topic 350, Intangibles – Goodwill and Other, the Company estimates the fair value of reporting units, utilizing unobservable Level 3 inputs. Level 3 inputs require significant management judgment due to the absence of quoted market prices or observable inputs for assets of a similar nature. The Company utilizes a discounted cash flow method to estimate the fair value of reporting units utilizing unobservable inputs. The fair value measurement of the reporting unit under the step-one and step-two analysis of the quantitative goodwill impairment test are classified as Level 3 inputs. There were no impairment charges to goodwill in any of the Company's reporting units in 2016, 2015 or 2014.
Intangible assets that are amortized are evaluated for recoverability whenever adverse effects or changes in circumstances indicate that the carrying value may not be recoverable. The recoverability test consists of comparing the undiscounted projected cash flows with the carrying amount. Should the carrying amount exceed undiscounted projected cash flows, an impairment loss would be recognized to the extent the carrying amount exceeds fair value. There were no impairment charges to any of the Company's intangible assets in either of the Company's segments in 2016, 2015 or 2014.
The Armstrong intangible assets acquired on January 14, 2015 were valued using a discounted cash flow methodology and are classified as Level 3 inputs.
Due to their short-term nature, the carrying value of cash and equivalents, accounts receivable, accounts payable, and notes payable approximate fair value. The carrying value of the Company's variable rate long-term debt instruments also approximates fair value due to the variable rate feature of these instruments.
NOTE 15 — SELECTED QUARTERLY FINANCIAL INFORMATION
The following table summarizes selected quarterly financial information for 2016 and 2015:

	Quarter Ended							
(Unaudited)	Dec. 31,	October 1,	July 2,	April 2,	Dec. 31,	October 3,	July 4,	April 4,
(In thousands, except for per share data)	2016	2016	2016	2016	2015	2015	2015	2015
Sales	$154,068	$155,099	$164,426	$159,530	$157,340	$200,145	$173,156	$161,638
Gross Profit (sales less cost of products sold)	$36,486	$38,663	$44,835	$39,483	$38,901	$59,427	$49,452	$40,162
Income Before Income Taxes	$14,296	$16,422	$21,555	$16,512	$14,822	$35,887	$27,044	$16,297
Net Income	$9,885	$12,074	$14,980	$11,485	$13,907	$24,694	$17,690	$10,683
Basic Earnings Per Share	$0.34	$0.42	$0.51	$0.39	$0.47	$0.84	$0.61	$0.37
Diluted Earnings Per Share	$0.33	$0.41	$0.50	$0.38	$0.46	$0.82	$0.59	$0.35

NOTE 16 — COMMITMENTS AND CONTINGENCIES
The Company leases certain facilities and equipment under various lease contracts with terms that meet the accounting definition of operating leases. These arrangements may include fair value renewal or purchase options. Rental expense for the years ended December 31, 2016, 2015 and 2014 was $3.9 million, $2.9 million and $3.0 million, respectively. The following table represents future minimum lease payment commitments as of December 31, 2016:

(In thousands)	
2017	$2,380
2018	1,872
2019	1,496
2020	137
2021	—
	$5,885

From time to time the Company may enter into purchase agreements with suppliers under which there is a commitment to buy a minimum amount of product. Purchase commitments outstanding at December 31, 2016 were $98.5 million. These commitments are not reflected as liabilities in the Company's Consolidated Balance Sheets.

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Legal Proceedings

On December 29, 2010, Lufthansa Technik AG ("Lufthansa") filed a Statement of Claim in the Regional State Court of Mannheim, Germany. Lufthansa's claim asserts that our subsidiary, AES sold, marketed and brought into use in Germany a power supply system that infringes upon a German patent held by Lufthansa. The relief sought by Lufthansa includes requiring AES to stop selling and marketing the allegedly infringing power supply system, a recall of allegedly infringing products sold to commercial customers since November 26, 2003 and compensation for damages. The claim does not specify an estimate of damages and a damages claim will be made by Lufthansa only if it receives a favorable ruling on the determination of infringement.

On February 6, 2015, the Regional State Court of Mannheim, Germany rendered its decision that the patent was infringed. The judgment does not require AES to recall products that are already installed in aircraft or have been sold to other end users. On July 15, 2015, Lufthansa advised AES of their intention to enforce the accounting provisions of the decision, which required AES to provide certain financial information regarding sales of the infringing product to enable Lufthansa to make an estimate of requested damages. Additionally, if Lufthansa provides the required bank guarantee specified in the decision, the Company may be required to offer a recall of products that are in the distribution channels in Germany. No such bank guarantee has been issued to date. As of December 31, 2016 there are no products in the distribution channels in Germany.

The Company appealed to the Higher Regional Court of Karlsruhe. On November 15, 2016, the Court issued its ruling and upheld the lower court's decision. The Company has submitted a petition to grant AES leave for appeal to the Federal Supreme Court. The Company believes it has valid defenses to refute the decision. Should the Federal Supreme Court decide to hear the case, the appeal process is estimated to extend up to two years. We estimate AES's potential exposure related to this matter to be approximately $1 million to $3 million. As loss exposure is not probable at this time, the Company has not recorded any liability with respect to this litigation as of December 31, 2016.

On November 26, 2014, Lufthansa filed a complaint in the United States District for the Western District of Washington. Lufthansa's complaint in this action alleges that AES manufactures, uses, sells and offers for sale a power supply system that infringes upon a U.S. patent held by Lufthansa. The patent at issue in the U.S. action is based on technology similar to that involved in the German action. On April 25, 2016, the Court issued its ruling on claim construction, holding that the sole independent claim in the patent is indefinite, rendering all claims in the patent indefinite. Based on this ruling, AES filed a motion for summary judgment on the grounds that the Court's ruling that the patent is indefinite renders the patent invalid and unenforceable. On July 20, 2016, the U.S. District Court granted the motion for summary judgment and issued an order dismissing all claims against AES with prejudice. Lufthansa has filed an appeal with the United States Court of Appeals for the Federal Circuit. The Company believes that it has valid defenses to Lufthansa's claims and will vigorously contest the appeal. As loss exposure is neither probable nor estimable at this time, the Company has not recorded any liability with respect to this litigation as of December 31, 2016.

NOTE 17 — SEGMENTS

Segment information and reconciliations to consolidated amounts for the years ended December 31 are as follows:

(In thousands)	2016	2015	2014
Sales:			
Aerospace	$534,408	$549,738	$494,747
Less Inter-segment Sales	(367)	—	—
Total Aerospace Sales	534,041	549,738	494,747
Test Systems	99,082	142,596	166,769
Less Inter-segment Sales	—	(55)	(477)
Test Systems	99,082	142,541	166,292
Total Consolidated Sales	$633,123	$692,279	$661,039
Operating Profit (Loss) and Margins:			
Aerospace	$77,966	$85,103	$79,753
	14.6 %	15.5 %	16.1 %
Test Systems	8,507	25,529	12,401
	8.6 %	17.9 %	7.4 %
Total Operating Profit	86,473	110,632	92,154
	13.7 %	16.0 %	13.9 %
Deductions from Operating Profit:			
Interest Expense, Net of Interest Income	(4,354)	(4,751)	(8,255)
Corporate and Other Expenses, Net	(13,334)	(11,831)	(4,792)
Income before Income Taxes	$68,785	$94,050	$79,107
Depreciation and Amortization:			
Aerospace	$19,873	$19,377	$17,847
Test Systems	5,273	5,209	8,786
Corporate	644	723	621
Total Depreciation and Amortization	$25,790	$25,309	$27,254
Identifiable Assets:			
Aerospace	$500,892	$510,884	$468,481
Test Systems	76,575	64,934	69,247
Corporate	26,877	33,425	25,182
Total Assets	$604,344	$609,243	$562,910
Capital Expenditures:			
Aerospace	$9,511	$16,503	$35,650
Test Systems	3,345	2,103	3,472
Corporate	181	35	1,760
Total Capital Expenditures	$13,037	$18,641	$40,882

Operating profit is sales less cost of products sold and other operating expenses, excluding interest expense and other corporate expenses. Cost of products sold and other operating expenses are directly identifiable to the respective segment.

For the years ended December 31, 2016, 2015 and 2014, there was no goodwill or purchased intangible asset impairment losses in either the Aerospace or Test System segment. In the Aerospace segment, goodwill amounted to $115.2 million and $115.4 million at December 31, 2016 and 2015, respectively. In the Test Systems segment, there was no goodwill as of December 31, 2016 and 2015.

The following table summarizes the Company’s sales into the following geographic regions for the years ended December 31:

	2016	2015	2014
(In thousands)			
United States	$504,270	$508,724	$444,277
North America (excluding United States)	12,331	13,044	8,717
Asia	52,171	108,967	141,247
Europe	61,200	57,936	64,742
South America	577	1,112	1,192
Other	2,574	2,496	864
	$633,123	$692,279	$661,039

The following table summarizes the Company’s property, plant and equipment by country for the years ended December 31:

	2016	2015	2014
(In thousands)			
United States	$114,048	$115,117	$105,698
France	8,216	9,092	10,347
Canada	548	533	271
	$122,812	$124,742	$116,316

Sales recorded by the Company’s foreign operations were $50.1 million, $50.8 million and $64.5 million in 2016, 2015 and 2014, respectively. Net income from these locations was $1.8 million, $3.4 million and $4.1 million in 2016, 2015 and 2014, respectively. Net assets held outside of the U.S. total $36.8 million and $36.1 million at December 31, 2016 and 2015, respectively. The exchange gain included in determining net income was insignificant in 2016 and 2014 and was $1.0 million in 2015. Cumulative translation adjustments amounted to $(8.6) million and $(8.0) million at December 31, 2016 and 2015, respectively.

The Company has a significant concentration of business with two major customers; Panasonic Aviation Corporation (“Panasonic”) and The Boeing Company (“Boeing”). The following is information relating to the activity with those customers:

	2016	2015	2014
Percent of Consolidated Revenue			
Panasonic	21.6%	21.0%	17.7%
Boeing	15.2%	13.0%	14.1%

(In thousands)	2016	2015
Accounts Receivable at December 31,		
Panasonic	$17,126	$14,433
Boeing	$11,737	$9,598

Sales to Panasonic are in the Aerospace segment. Sales to Boeing occur in both segments.

NOTE 18 — ACQUISITIONS

Armstrong Aerospace, Inc.

On January 14, 2015, the Company purchased 100% of the equity of Armstrong for $52.3 million in cash. Armstrong, located in Itasca, Illinois, is a leading provider of engineering, design and certification solutions for commercial aircraft, specializing in connectivity, in-flight entertainment, and electrical power systems. Armstrong is included in our Aerospace segment. This transaction was not considered material to the Company’s financial position or results of operations. All of the goodwill and purchased intangible assets are expected to be deductible for tax purposes over 15 years. The purchase price allocation for this acquisition has been finalized.

Astronics Test Systems

On February 28, 2014, our wholly owned subsidiary, ATS, purchased substantially all of the assets and liabilities of the Test and Services Division of EADS North America, Inc. for approximately $69.4 million in cash. Located in Irvine, California, ATS is a leading provider of highly-engineered automatic test systems, subsystems and instruments for the semiconductor, consumer electronics, commercial aerospace & defense industries. ATS provides fully customized testing systems and support services for these markets. It also designs and manufactures test equipment under the test instrument brands known as Racal and Talon. The acquisition strengthens our service offerings and expertise in the test market. This subsidiary is included in our Test Systems segment. The purchase price allocation for this acquisition has been finalized.

Acquisition costs are expensed as incurred. Acquisition related expenses were insignificant in 2016 and were approximately $0.4 million and $0.3 million in 2015 and 2014, respectively.

NOTE 19 — SUBSEQUENT EVENTS

On April 3, 2017, Astronics Custom Control Concepts Inc., a wholly owned subsidiary of the Company acquired substantially all the assets and certain liabilities of Custom Control Concepts LLC (“CCC”), located in Kent, Washington. CCC is a provider of cabin management and in-flight entertainment systems for a range of aircraft. The total consideration for the transaction was approximately $10.2 million, net of $0.5 million in cash acquired. All of the goodwill and purchased intangible assets are expected to be deductible for tax purposes over 15 years. The purchase price allocation for this acquisition has not been finalized. CCC will be included in our Aerospace segment.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We have established disclosure controls and procedures that are designed to ensure that material information relating to us, including our consolidated subsidiaries, is made known to our Chief Executive Officer (principal executive officer) and Chief Financial Officer (principal financial officer) by others within our organization to allow timely decisions regarding required disclosure. Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures as of December 31, 2016. Based on this evaluation, as a result of the material weakness in our internal control over financial reporting described below, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were not effective as of December 31, 2016.

Notwithstanding the material weakness discussed below, our management, including our Chief Executive Officer and Chief Financial Officer, has concluded that the consolidated financial statements included in this report fairly present, in all material respects, our financial condition, results of operations and cash flows for the periods presented in conformity with accounting principles generally accepted in the United States.

Management discovered a material weakness in the design of information technology change controls over a report writing application. Additionally, management identified deficiencies in certain review controls over the financial statement consolidation process, which when aggregated along with the information technology change controls matter described above, aggregated to a material weakness over the financial statement close process as of December 31, 2016.

The Company has begun implementing changes to the design and application of new controls as well as make significant changes to the design of existing controls over information technology as well as controls related to the financial statement consolidation process. The Company has made progress towards remediation of the material weakness as of the date of this filing and expects to complete remediation by December 31, 2017. We will continue the process of enhancing our controls as well as continue to test their effectiveness over the remainder of 2017.

Management’s Report on Internal Control over Financial Reporting

See the report appearing under Item 8, Financial Statements and Supplemental Data, Managements Report on Internal Control Over Financial Reporting.

Changes in Internal Control over Financial Reporting

There have been no changes in the Company’s internal control over financial reporting during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The documents filed as a part of this report are as follows:

1. The following financial statements are included:

(i) Consolidated Statements of Operations for the years ended December 31, 2016, 2015 and 2014
(ii) Consolidated Statements of Comprehensive Income for the years ended December 31, 2016, 2015 and 2014
(iii) Consolidated Balance Sheets as of December 31, 2016 and 2015
(iv) Consolidated Statements of Cash Flows for the years ended December 31, 2016, 2015 and 2014

(v) Consolidated Statements of Shareholders’ Equity for the years ended December 31, 2016, 2015 and 2014
(vi) Notes to Consolidated Financial Statements
(vii) Reports of Independent Registered Public Accounting Firm
(viii) Management’s Report on Internal Control Over Financial Reporting

2. Financial Statement Schedule

Schedule II. Valuation and Qualifying Accounts

All other consolidated financial statement schedules are omitted because they are inapplicable, not required, or the information is included elsewhere in the consolidated financial statements or the notes thereto.

3. Exhibits

Exhibit No.	Description
3 (a)	Restated Certificate of Incorporation, incorporated by reference to the registrant's 2013 Annual Report on Form 10-K, Exhibit 3(a), filed March 7, 2014 (File No. 000-07087).
(b)	By-Laws, as amended, incorporated by reference to the registrant's 2008 Annual Report on Form 10-K, Exhibit 3(b), filed March 11, 2009 (File No. 000-07087).
(c)	Certificate of Amendment of the Certificate of Incorporation of Astronics Corporation; incorporated by reference to the registrant's Form 8-K, Exhibit 3.1, filed May 28, 2013 (File No. 000-07087).
10.1*	Restated Thrift and Profit Sharing Retirement Plan, incorporated by reference to the registrant's 2010 Annual Report on Form 10-K, Exhibit 10.1, filed March 3, 2011 (File No. 000-07087).
10.2*	2001 Stock Option Plan, incorporated by reference to the registrant's 2010 Annual Report on Form 10-K, Exhibit 10.4, filed March 3, 2011 (File No. 000-07087).
10.3*	Non-Qualified Supplemental Retirement Plan, incorporated by reference to the registrant's 2010 Annual Report on Form 10-K, Exhibit 10.5, filed March 3, 2011 (File No. 000-07087).
10.4*	Employment Termination Benefits Agreement dated December 16, 2003 between Astronics Corporation and Peter J. Gundermann, President and Chief Executive Officer of Astronics Corporation, incorporated by reference to the registrant's 2010 Annual Report on Form 10-K, Exhibit 10.6, filed March 3, 2011 (File No. 000-07087).
10.5*	Employment Termination Benefits Agreement dated December 16, 2003 between Astronics Corporation and David C. Burney, Vice President and Chief Financial Officer of Astronics Corporation, incorporated by reference to the registrant's 2010 Annual Report on Form 10-K, Exhibit 10.7, filed March 3, 2011 (File No. 000-07087).
10.6*	2005 Director Stock Option Plan, incorporated by reference to the registrant's 2010 Annual Report on Form 10-K, Exhibit 10.8, filed March 3, 2011 (File No. 000-07087).
10.7*	Supplemental Retirement Plan, Amended and Restated, March 6, 2012, incorporated by reference to the registrant's 2012 Annual Report on Form 10-K, Exhibit 10.10, filed February 22, 2013 (File No. 000-07087).
10.8*	First Amendment of the Employment Termination Benefits Agreement dated December 30, 2008 between Astronics Corporation and Peter J. Gundermann, President and Chief Executive Officer of Astronics, incorporated by reference to the registrant's 2008 Annual Report on Form 10-K, Exhibit 10.11, filed March 11, 2009 (File No. 000-07087).
10.9*	First Amendment of the Employment Termination Benefits Agreement dated December 30, 2008 between Astronics Corporation and David C. Burney, Vice President and Chief Financial Officer of Astronics Corporation , incorporated by reference to the registrant's 2008 Annual Report on Form 10-K, Exhibit 10.12, filed March 11, 2009 (File No. 000-07087).

10.10*	Employment Termination Benefits Agreement Dated February 18, 2005 between Astronics Corporation and Mark A. Peabody, Executive Vice President of Astronics Advanced Electronic Systems, Inc., incorporated by reference to the registrant’s 2010 Annual Report on Form 10-K, Exhibit 10.13, filed March 3, 2011 (File No. 000-07087).
10.11*	First Amendment of the Employment Termination Benefits Agreement dated December 31, 2008 between Astronics Corporation and Mark A. Peabody, Executive Vice President of Astronics Advanced Electronic Systems, Inc., incorporated by reference to the registrant’s 2010 Annual Report on Form 10-K, Exhibit 10.14, filed March 3, 2011 (File No. 000-07087).
10.12*	Form of Indemnification Agreement as executed by each of Astronics Corporation’s Directors and Executive Officers, incorporated by reference to the registrant’s 2010 Annual Report on Form 10-K, Exhibit 10.15, filed March 3, 2011 (File No. 000-07087).
10.13*	2011 Employee Stock Option Plan, incorporated by reference to the registrant’s Form S-8, Exhibit 4.1 filed on August 4, 2011 (File No. 000-07087).

10.14*	Supplemental Retirement Plan II, incorporated by reference to the registrant's 2012 Annual Report on Form 10-K, Exhibit 10.18, filed February 22, 2013 (File No. 000-07087).
10.15	Stock Purchase Agreement between Astronics Corporation, Peco, Inc., and the shareholders of the Company incorporated by reference to the registrant's Form 8-K, Exhibit 10.1, filed May 29, 2013 (File No. 000-07087).
10.16	Amendment to the Stock Purchase Agreement between Astronics Corporation, Peco, Inc., and the shareholders of the Company incorporated by reference to the registrant's Form 8-K, Exhibit 10.1, filed July 19, 2013 (File No. 000-07087).
10.17	Asset Purchase Agreement by and among Astronics AS Corporation, AeroSat Corporation, AeroSat Airborne Internet LLC, AeroSat Avionics, LLC and AeroSat Tech Licensing, LLC incorporated by reference to the registrant's Form 8-K, Exhibit 10.1, filed October 1, 2013 (File No. 000-07087).
10.18	Sale Agreement and Guarantee Agreement relating to PGA Electronic, incorporated by reference to the registrant's Form 8-K, Exhibit 10.1 and Exhibit 10.2, filed November 5, 2013 (File No. 000-07087).
10.19	Purchase Agreement between EADS North America Inc. and Astronics Corporation dated as of January 20, 2014, incorporated by reference to the registrant's Form 8-K, Exhibit 10.1 filed January 21, 2014 (File No. 000-07087).
10.20	Fourth Amended and Restated Credit Agreement entered into by and among Astronics Corporation, HSBC Bank USA, National Association, Bank of America, N.A. and Manufacturers and Traders Trust Company incorporated by reference to the registrant's Form 8-K, Exhibit 10.1, filed September 26, 2014 (File No. 000-07087).
10.21	Stock Purchase Agreement between Planesite Holdings Inc., the shareholders of Planesite, Robert Abbinante and Astronics Corporation dated as of December 23, 2014, incorporated by reference to the registrant's Form 8-K, Exhibit 10.1 filed December 24, 2014 (File No. 000-07087).
10.22	Amendment No.1 to the Fourth Amended and Restated Credit Agreement entered into by and among Astronics Corporation, HSBC Bank USA, National Association, Bank of America, N.A., Manufacturers and Traders Trust Company and Wells Fargo Bank, incorporated by reference to the registrant's Form 8-K, Exhibit 10.1, filed January 15, 2016 (File No. 000-07087).
21**	Subsidiaries of the Registrant; filed herewith.
23**	Consent of Independent Registered Public Accounting Firm; filed herewith.
31.1**	Certification of Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002; filed herewith
31.2**	Certification of Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002; filed herewith
32**	Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002; filed herewith
101.INS**	XBRL Instance Document

101.SCH** XBRL Taxonomy Extension Schema Document

101.CAL** XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF** XBRL Taxonomy Extension Definition Linkbase Document

101.LAB** XBRL Taxonomy Extension Label Linkbase Document

101.PRE** XBRL Taxonomy Extension Presentation Linkbase Document

* Identifies a management contract or compensatory plan or arrangement as required by Item 15(a) (3) of Form 10-K.
** Submitted electronically herewith

SCHEDULE II
Valuation and Qualifying Accounts

Year	Description	Balance at the Beginning of Period	Additions Charged to Cost and Expense	Write-Offs	Balance at End of Period
(In thousands)					
2016	Allowance for Doubtful Accounts	$ 312	$ 388	$ (98)	$ 602
	Reserve for Inventory Valuation	14,594	2,015	(1,199)	15,410
	Deferred Tax Valuation Allowance	2,640	1,176	—	3,816
2015	Allowance for Doubtful Accounts				