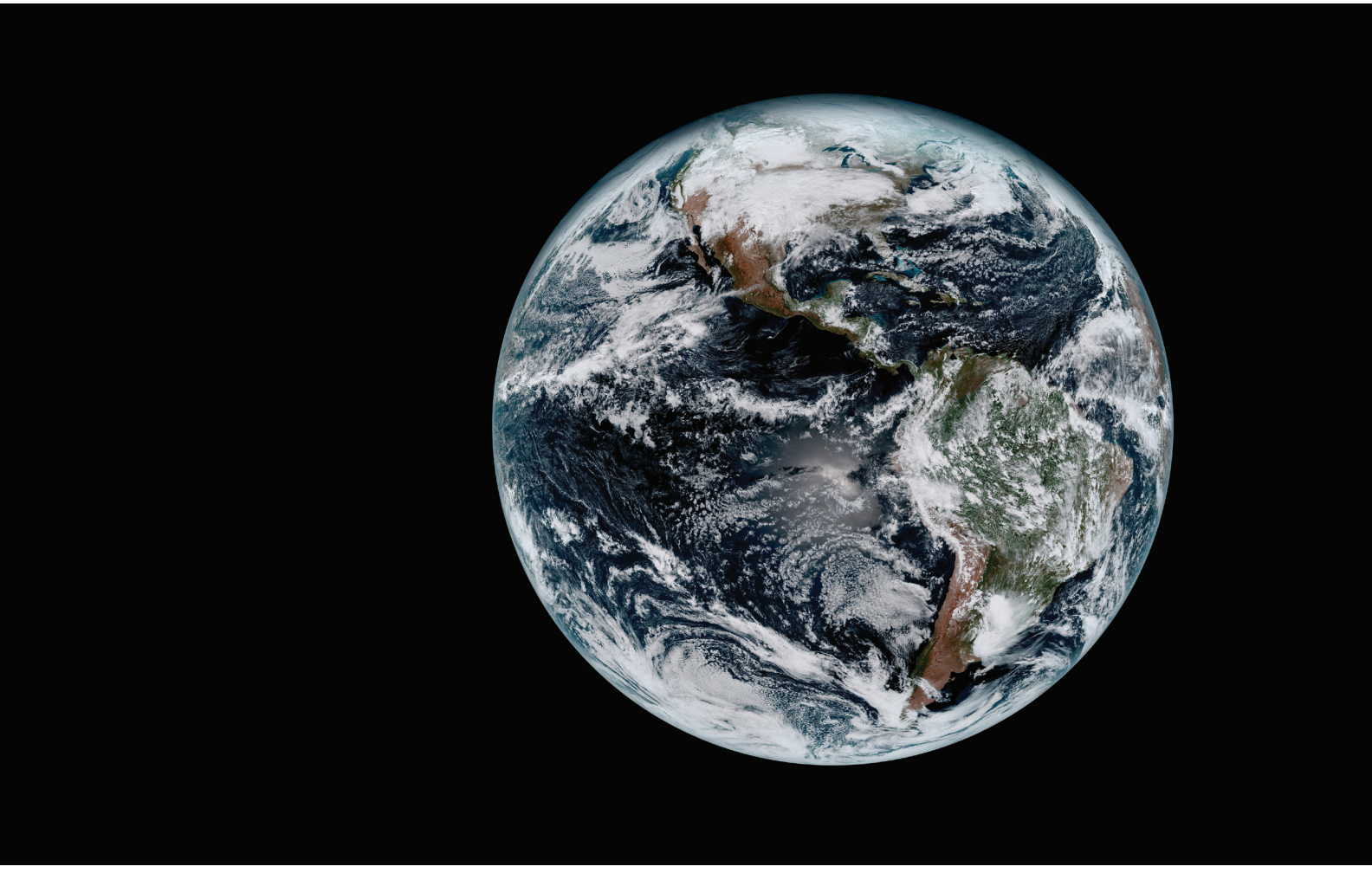
2016 ANNUAL REPORT

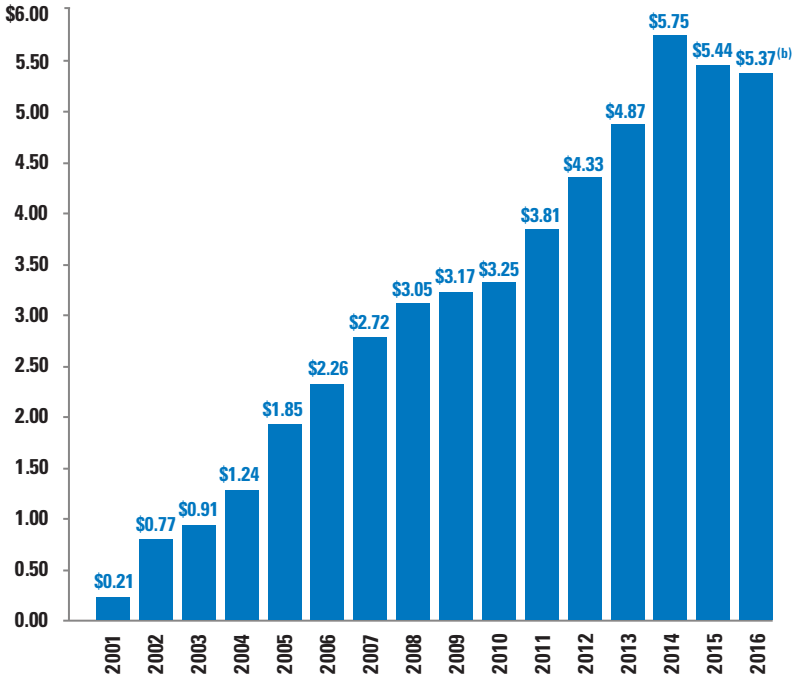


TELEDYNE TECHNOLOGIES

Everywhereyoulook™

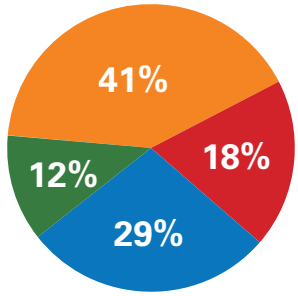
GAAP EPS[(a)]

$ per share



(a) Represents total earnings per diluted share for 2002 through 2008 and 2013 through 2016, and earnings per diluted share from continuing operations for 2001 and 2009 through 2012

(b) Includes pretax charges of $7.9 million ($0.16 per share) related to the pending acquisition of e2v technologies plc



2016 SALES BY SEGMENT

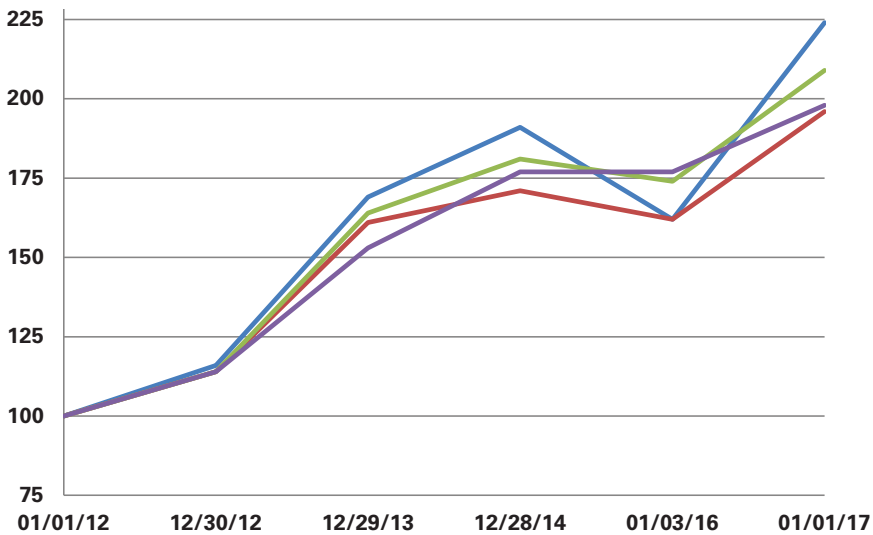
- **Instrumentation**
  Test and measurement, monitoring and control instrumentation, and power and communications connectivity devices for marine, environmental, electronics and other applications
- **Digital Imaging**
  High performance sensors, cameras and systems within the visible, infrared and X-ray spectra, used in industrial, government and medical applications
- **Aerospace and Defense Electronics**
  Sophisticated electronic components, subsystems and communications products, including defense electronics, commercial avionics, and harsh environment interconnects
- **Engineered Systems**
  Innovative systems engineering, manufacturing and specialized products for government, space, energy, and industrial customers

Cumulative Total Stockholder Return

The graph set forth to the right shows the cumulative total stockholder return (i.e. price change plus reinvestment of dividends) on our common stock for the five fiscal years ending January 1, 2017, as compared to the Standard & Poor's 500 Composite Index, the Russell 2000 Index and the Standard & Poor's 1500 Industrials Index.

The graph assumes $100 was invested on December 30, 2011.

In accordance with the rules of the SEC, this presentation is not incorporated by reference into any of our registration statements under the Securities Act of 1933.



	01/01/12	12/30/12	12/29/13	12/28/14	01/03/16	01/01/17
Teledyne Technologies	100	116	169	191	162	224
Russell 2000	100	114	161	171	162	196
S&P 1500 Industrials	100	114	164	181	174	209
S&P 500 Composite	100	114	153	177	177	198

FINANCIAL HIGHLIGHTS

Selected Consolidated Financial Data

(In millions, except per share data)

SUMMARY FINANCIAL INFORMATION

	2016	2015	2014	2013	2012
Sales	$2,149.9	$2,298.1	$2,394.0	$2,338.6	$2,127.3
Net income from continuing operations	190.9	195.8	217.7	185.0	161.8
Net income (loss) from discontinued operations	—	—	—	—	2.3
Net income attributable to Teledyne	190.9	195.8	217.7	185.0	164.1
Diluted earnings per common share					
Continuing operations	5.37	5.44	5.75	4.87	4.33
Discontinued operations	—	—	—	—	0.06
Diluted earnings per common share	5.37	5.44	5.75	4.87	4.39
Weighted average common shares outstanding	35.5	36.0	37.9	38.0	37.4

SUMMARY BALANCE SHEET DATA

	2016	2015	2014	2013	2012
Cash and cash equivalents	$98.6	$85.1	$141.4	$66.0	$45.8
Total assets	2,774.4	2,717.1	2,862.2	2,751.1	2,406.4
Long-term debt and capital lease obligations	515.8	761.5	618.9	549.0	556.2
Total equity	1,554.4	1,344.1	1,468.5	1,518.7	1,203.4

See “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the “Notes to Consolidated Financial Statements” in the 2016 Form 10-K for additional information regarding Teledyne Technologies Incorporated’s financial data.

LETTER TO **STOCKHOLDERS**

Compared to any time in our history, I am the most excited about our current business portfolio and the overall outlook for our end markets. Seventeen years ago, Teledyne was largely comprised of low-margin service businesses, whose technology was often owned by our customers. Today, we are a leading manufacturer of proprietary high technology products for demanding markets and critical applications.

Teledyne instruments are used to continuously monitor air quality across the globe. We provide a broad spectrum of imaging sensors and cameras for applications ranging from commercial machine vision to space-based sensors in search of the origin of the universe. Certain products are so well-engineered that they can last for years on the ocean floor or autonomously travel for months at sea. Others systems have operated for decades in deep space, up to seven billion miles from earth.

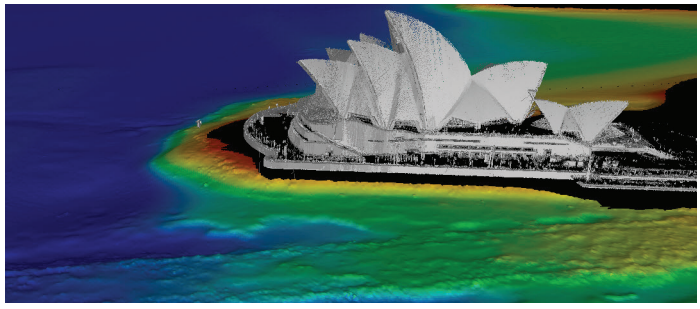
Over the last several years we have endured cuts to defense spending followed by a severe decline in offshore energy markets. While I am exceptionally pleased with our execution and our responses to such challenges, I am also excited by the feeling that the majority of such turmoil is behind us. For the first time in years, there is no obvious storm on the horizon for Teledyne or our largest end markets.

Despite the recent headwinds, we achieved record operating margin in the third quarter of 2016, we generated record full-year cash flow, and we were largely able to maintain GAAP earnings, even including acquisition-related charges. Furthermore, our year-end backlog was over $110 million greater than last year.

Looking forward, most of our commercial businesses are growing, marine instrumentation comparisons will ease significantly in 2017, and our government businesses are recovering. In addition, our largest acquisition to date is currently pending and should be completed shortly.

Finally, while we have reduced our manufacturing footprint and headcount when necessary over the last few years, I firmly believe that the quality and depth of Teledyne management has never been higher.

In 2016 our business portfolio continued to evolve and improve. For example, we enhanced our software capabilities with the acquisition of CARIS, the leading developer of geospatial software designed for the hydrographic and marine mapping community.



Above and below water survey of Sydney harbor using Teledyne RESON sonar and Teledyne Optech LIDAR. The Port Authority of New South Wales processes such data with Teledyne CARIS software.

Teledyne LeCroy was already the market leader in serial data protocol analyzers,

which are used by engineers to troubleshoot data communication systems and test interoperability. Through the acquisitions of Quantum Data and Frontline Test Equipment, we added protocol analyzers for High-Definition Multimedia Interface (or HDMI) and Bluetooth, respectively, to our wide array of other analyzers for standards such as Universal Serial Bus (or USB) and Peripheral Component Interconnect Express (or PCI Express).

Quantum Data and Frontline Test Equipment add to Teledyne LeCroy's leadership in protocol analyzers, which enable developers to test communications standards including USB, PCI Express, HDMI, and Bluetooth.

In November, we acquired additional ozone analyzers and other gas monitoring sensors to expand Teledyne Advanced Pollution Instrumentation. Teledyne API, our very first acquisition, has been one of our strongest performing companies and is a leader in air quality monitoring instrumentation.

Finally, we increased our products for life sciences and pharmaceutical applications with the acquisition of Hanson Research, whose instruments help determine the release rate of an active pharmaceutical ingredient in tablet or capsule form as it dissolves into solution.

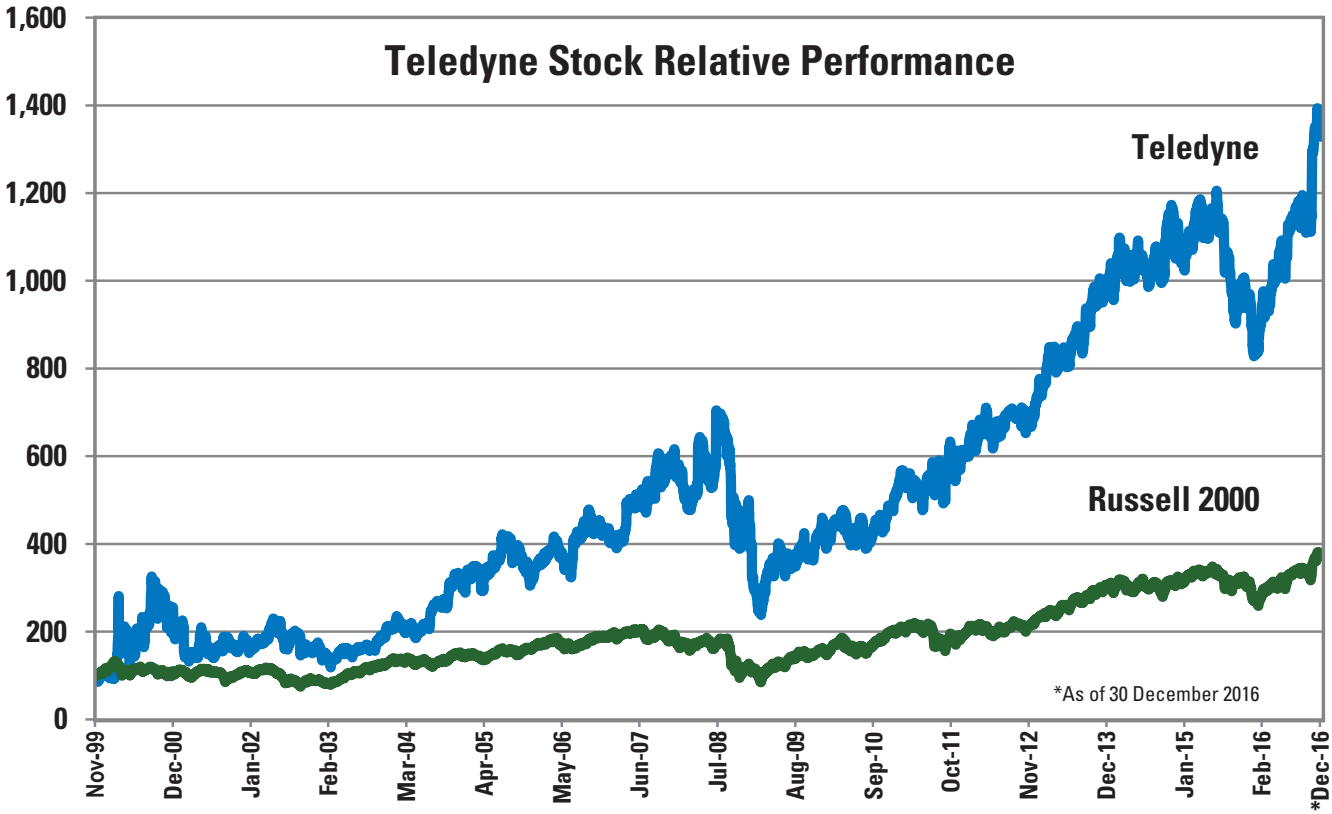
Hanson Research's automated dissolution testers are critical to pharmaceutical development and quality control.

It is worth noting that we have not sold any businesses which we have acquired. However, we will exit those businesses which become commoditized or which we no longer find attractive. In July 2016, we sold Teledyne Printed Circuit Technology. While part of Teledyne for over 50 years, the divestiture was consistent with our focus on high-technology, higher-margin, proprietary engineered products.

In December, we were delighted to announce the acquisition of e2v technologies. Even though e2v will be our largest acquisition, every one of its businesses is complementary to Teledyne. Both Teledyne and e2v are leaders in space and astronomy imaging, but Teledyne largely provides infrared detectors and e2v provides visible light sensors. While we both provide microwave devices, e2v's largest market is subsystems for cancer radiotherapy. Historically, Teledyne has primarily served the defense markets such as electronic warfare and radar. In machine vision applications, e2v's advanced capabilities in proprietary complementary metal-oxide semiconductor (CMOS) sensor design add to Teledyne's strengths in cameras and vision systems.

All around the world, Teledyne DALSA's low-dose X-ray detectors are used in surgery, mammography and dental radiography; e2v is a major supplier of magnetrons for cancer radiotherapy.

Acquisitions have indeed contributed to Teledyne's growth, but we do not view, or manage, Teledyne as simply a growth-through-acquisition company.



Despite substantial cost cutting in 2016, our emphasis on new product development increased. Specifically, internally funded research and development was a record at approximately $170 million or eight percent of sales, and with relevant customer funded R&D the value was closer to twelve percent. We also differentiate ourselves from most companies our size by having a centralized applied research laboratory that bolsters our product development capabilities. Selected new products and honors included Teledyne LeCroy's HDO9000 Oscilloscope, which was named an Electronics Products' 2016 Product of the Year. In both February 2016 and January 2017, Teledyne Optech received the annual Grand Award for Technology from MAPPS, a national association of firms in the surveying, spatial data and geographic information systems markets. We continue to possess one of the broadest portfolios of unmanned marine vehicles, and in December 2016, a Teledyne-built autonomous underwater vehicle made headlines when the drone was seized in international waters.

In conclusion, we are a much leaner company today, and our current market outlook is the most favorable in years. While there will always be some turbulence, I nevertheless believe we are entering a more stable period of multi-year growth in revenue and earnings.

Best regards,

Robert Mehrabian
Chairman, President and Chief Executive Officer
March 2, 2017

BOARD OF DIRECTORS

Left to Right:

CHARLES CROCKER [2][3][4]
Chairman and CEO,
Crocker Capital
Retired Chairman and CEO,
BEI Technologies, Inc.

ROBERT A. MALONE [1][3]
Executive Chairman, President and CEO
First Sonora Bancshares, Inc.
Retired Chairman of the Board and President,
BP America Inc.

JANE C. SHERBURNE [1][3]
Principal of Sherburne PLLC
Former Senior Executive Vice President,
General Counsel and Corporate Secretary,
The Bank of New York Mellon Corporation

KENNETH C. DAHLBERG [1][3]
Retired Chairman and CEO
Science Applications International
Corporation (SAIC)

MICHAEL T. SMITH [1][2]
Retired Chairman and CEO,
Hughes Electronics Corporation

ROBERT MEHRABIAN
Chairman, President and
CEO, Teledyne Technologies Incorporated

PAUL D. MILLER [1][2]
Retired Chairman and CEO,
Alliant Techsystems, Inc.
Commander-in-Chief, U.S. Atlantic Command
and NATO Supreme Allied Commander - Atlantic
(Retired)

ROXANNE S. AUSTIN [2][3]
President, Austin Investment Advisors
Former President and Chief Operating
Officer of DIRECTV, Inc.

SIMON M. LORNE [1][2]
Vice Chairman and Chief Legal Officer,
Millennium Management LLC
Former General Counsel, U.S. Securities
and Exchange Commission

WESLEY W. VON SCHACK [2][3]
Chairman,
AEGIS Insurance Services
Former Chairman, President and CEO
Energy East Corporation

[1] *Audit Committee*
[2] *Nominating and Governance Committee*
[3] *Personnel and Compensation Committee*
[4] *Lead Director*

EXECUTIVE MANAGEMENT

CARL ADAMS
Vice President, Business Risk Assurance

CYNTHIA Y. BELAK*
Vice President and Controller

STEPHEN F. BLACKWOOD
Vice President and Treasurer

GEORGE C. BOBB, III*
Vice President, Contracts, IT and Selected Operations, and Deputy General Counsel for Litigation

MELANIE S. CIBIK*
Senior Vice President, General Counsel, Chief Compliance Officer and Secretary

JASON W. CONNELL
Vice President, Human Resources and Associate General Counsel

JANICE L. HESS
President, Engineered Systems Segment

SUSAN L. MAIN*
Senior Vice President and Chief Financial Officer

ROBERT MEHRABIAN*
Chairman, President and Chief Executive Officer

ALDO (AL) PICHELLI*
Chief Operating Officer

MIKE R. READ
President, Marine Instrumentation

THOMAS H. RESLEWIC
Chief Executive Officer, Environmental & Electronic Measurement Instrumentation

EDWIN ROKS
Vice President, Teledyne and President, Teledyne DALSA, Inc.

JASON VANWEES*
Senior Vice President, Strategy and Mergers & Acquisitions

** Section 16 Officer*

STOCKHOLDER INFORMATION

CORPORATE OFFICES
Teledyne Technologies Incorporated
1049 Camino Dos Rios
Thousand Oaks, CA 91360
Telephone: (805) 373-4545
Fax: (805) 373-4775
www.teledyne.com

TRANSFER AGENT AND REGISTRAR
Computershare
P.O. BOX 30170
College Station, TX 77842
Customer Service: 1-888-540-9867
www.computershare.com

STOCKHOLDER PUBLICATIONS - FORM 10-K
Information on how to access Annual Reports (including Form 10-K) and proxy statements is mailed to all stockholders of record. Copies of our SEC periodic reports, corporate governance guidelines, code of ethics and committee charters are also available on our website at www.teledyne.com. For additional information, contact Investor Relations.

STOCK EXCHANGE LISTING
The common stock of Teledyne Technologies Incorporated is traded on the New York Stock Exchange (symbol TDY).

ANNUAL MEETING
The Annual Meeting of Stockholders will be held on Wednesday, April 26, 2017, at 9:00 a.m. PDT, at Teledyne Technologies Incorporated, 1049 Camino Dos Rios, Thousand Oaks, CA 91360.

INDEPENDENT AUDITORS
Deloitte & Touche LLP
Los Angeles, California

CURRENT NEWS AND GENERAL INFORMATION
Information about Teledyne is available at www.teledyne.com.

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

FORM 10-K

(Mark One)

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

For the fiscal year ended January 1, 2017
OR

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

For the transition period from _____ to ____
Commission file number 1-15295

TELEDYNE TECHNOLOGIES INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware	25-1843385
(State or other jurisdiction of incorporation of organization)	(I.R.S. Employer Identification Number)
1049 Camino Dos Rios, Thousand Oaks, California	91360-2362
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (805)-373-4545
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value $.01 per share	New York Stock Exchange

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

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

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 ☒

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

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

Indicate by check mark 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 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. ☒

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 the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐
(Do not check if a smaller reporting company)

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

The aggregate market value of the registrant's Common Stock held by non-affiliates on June 30, 2016, was $3.2 billion, based on the closing price of a share of Common Stock on such date, which is the last business day of the registrant's most recently completed fiscal second quarter. Shares of Common Stock known by the registrant to be beneficially owned by the registrant's directors and the registrant's executive officers subject to Section 16 of the Securities Exchange Act of 1934 are not included in the computation. The registrant, however, has made no determination that such persons are "affiliates" within the meaning of Rule 12b-2 under the Securities Exchange Act of 1934.

At February 28, 2017, there were 35,216,739 shares of the registrant's Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Selected portions of the registrant's proxy statement for its 2017 Annual Meeting of Stockholders (the "2017 Proxy Statement") are incorporated by reference in Part III of this Report. Information required by paragraphs (d)(1)-(3) and (e)(5) of Item 407 of Regulation S-K shall not be deemed "soliciting material" or to be filed with the Commission as permitted by Item 407 of Regulation S-K.

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Explanatory Notes

In this Annual Report on Form 10-K, Teledyne Technologies Incorporated is sometimes referred to as the "Company" or "Teledyne".

For a discussion of risk factors and uncertainties associated with Teledyne and any forward looking statements made by us, see the discussion beginning on page 13 of this Annual Report on Form 10-K.

PART I

Item 1. Business

Who We Are

Teledyne Technologies Incorporated provides enabling technologies for industrial growth markets. We have evolved from a company that was primarily focused on aerospace and defense to one that serves multiple markets that require advanced technology and high reliability. These markets include deepwater oil and gas exploration and production, oceanographic research, air and water quality environmental monitoring, electronics design and development, factory automation and medical imaging. Our products include monitoring and control instrumentation for marine and environmental applications, harsh environment interconnects, electronic test and measurement equipment, digital imaging sensors and cameras, aircraft information management systems, and defense electronics and satellite communication subsystems. We also supply engineered systems for defense, space, environmental and energy applications. We differentiate ourselves from many of our direct competitors by having a customer and company sponsored applied research center that augments our product development expertise.

Our principal executive offices are located at 1049 Camino Dos Rios, Thousand Oaks, California 91360-2362. Our telephone number is (805) 373-4545. We are a Delaware corporation that was spun-off as an independent company on November 29, 1999.

Total sales in 2016 were $2,149.9 million, compared with $2,298.1 million in 2015 and $2,394.0 million in 2014. Approximately 73% of our total sales in 2016 were to commercial and international customers and 27% was to the U.S. Government, as a prime contractor or subcontractor. Of the 27% U.S. Government sales, approximately 54% were attributable to fixed-price type contracts with the balance attributable to cost-plus-fee type contracts. Sales to international customers accounted for approximately 43% of total sales in 2016.

Strategy

Our strategy continues to emphasize growth in our core markets of instrumentation, digital imaging, aerospace and defense electronics and engineered systems. Our core markets are characterized by high barriers to entry and include specialized products and services not likely to be commoditized. We intend to strengthen and expand our core businesses with targeted acquisitions and through product development. We continue to focus on balanced and disciplined capital deployment among capital expenditures, acquisitions and share repurchases. We aggressively pursue operational excellence to continually improve our margins and earnings. At Teledyne, operational excellence includes the rapid integration of the businesses we acquire. Using complementary technology across our businesses and internal research and development, we seek to create new products to grow our company and expand our addressable markets. We continue to evaluate our businesses to ensure that they are aligned with our strategy.

Our Recent and Pending Acquisitions

Consistent with our strategy, during 2016, we made acquisitions and investments totaling $93.4 million, which included the following:

To broaden our test and measurement instrumentation capabilities:

- Assets of Quantum Data, Inc. (“Quantum Data”) based in Elgin, Illinois, which provides electronic test and measurement instrumentation and is a market leader in video protocol analysis test tools.
- Frontline Test Equipment, Inc. (“Frontline”) based in Charlottesville, Virginia, which provide electronic test and measurement instrumentation and is a market leader in wireless protocol analysis test tools.

To expand our digital imaging capabilities:

- CARIS, Inc. (“CARIS”) based in Fredericton, New Brunswick, Canada, is a leading developer of geospatial software designed for the hydrographic and marine community.

To expand our environmental instrumentation capabilities:

- Hanson Research Corporation (“Hanson Research”) headquartered in Chatsworth, California, which specializes in analytical instrumentation for the pharmaceutical industry.
- Assets of IN USA, Inc. (“IN USA”) headquartered in Norwood, Massachusetts, which manufactures a range of ozone generators, ozone analyzers and other gas monitoring instruments utilizing ultraviolet and infrared based technologies.

On December 12, 2016, Teledyne and e2v technologies plc (LSE:E2V.L) ("e2v") reached agreement on the terms of a recommended cash acquisition to be made by Teledyne for the ordinary share capital of e2v by means of a Scheme of Arrangement (the "Offer"). Under the terms of the Offer, e2v's ordinary shareholders ("e2v Shareholders") will receive 275 pence in cash for each e2v share valuing the entire issued and to be issued ordinary share capital of e2v at approximately £619.6 million on a fully diluted basis. It is expected that, subject to the satisfaction or waiver of all relevant conditions, the acquisition will be completed in the first half of 2017.

Our Business Segments

Our businesses are aligned in four segments: Instrumentation, Digital Imaging, Aerospace and Defense Electronics, and Engineered Systems. Financial information about our business segments can be found in Note 12 of our Notes to Consolidated Financial Statements in this Annual Report on Form 10-K.

The respective percentage contributions of our four business segments to our total sales in 2016, 2015 and 2014 are summarized in the following table:

	Percentage of Sales		
Segment contribution to total sales (a)	**2016**	**2015**	**2014**
Instrumentation	**41%**	46%	47%
Digital Imaging	**18%**	16%	17%
Aerospace and Defense Electronics	**29%**	26%	25%
Engineered Systems	**12%**	12%	11%
Total	**100%**	100%	100%

(a) For further discussion of our four segments see Note 12 to the Notes to Consolidated Financial Statements.

Instrumentation

Our Instrumentation segment provides monitoring and control instruments for marine, environmental, industrial and other applications, as well as electronic test and measurement equipment. We also provide power and communications connectivity devices for distributed instrumentation systems and sensor networks deployed in mission critical, harsh environments.

Marine Instrumentation

We offer a variety of products designed for use in harsh underwater environments, instruments that measure currents and other physical properties in the water column, systems that create acoustic images of objects beneath the water's surface, including the bottom of a body of water, and sensors that determine the geologic structure below the bottom. We also design and manufacture vehicles that utilize and transport these sensors over and beneath the water's surface.

We design and manufacture geophysical streamer cables, hydrophones, seismic energy sources and specialty products used in offshore hydrocarbon exploration to locate oil and gas reserves beneath the ocean floor. Through our 2014 acquisition of Bolt Technology Corporation ("Bolt"), we are now a leading supplier of marine seismic energy sources and replacement parts for offshore energy exploration. Our Acoustic Doppler Current Profilers ("ADCPs") precisely measure currents at varying depths in oceans and rivers, and our Doppler Velocity Logs ("DVLs") are used for navigation by civilian and military surface ships, unmanned underwater vehicles and naval divers. In addition to our DVLs, which are acoustic navigation devices, we design and manufacture inertial sensing and navigation products, as well as subsea pipe and cable detection systems for offshore energy, oceanographic and military marine markets. We also design and manufacture remotely-controlled and tethered instrumentation deployment vehicles used for current measurement, seafloor mapping and measurement of physical parameters such as salinity.

Additionally, we design and manufacture hydrographic survey instrumentation used in port surveys, dredging, pre- and post-installation of offshore energy infrastructure and other challenging underwater applications. Our multibeam sonar systems range from portable high-resolution systems used on autonomous underwater vehicles ("AUVs") to full ocean depth vessel-mounted oceanographic systems. Our multibeam sonar systems are used for creating highly accurate maps of underwater offshore constructions, wrecks or quay walls in harbors, and in particular, high-quality maps of the seafloor. With advanced imaging capabilities, our sonars create images of hidden structures on the seafloor and are also used to create real-time images of the environment in the oceans and enable precise navigation of AUVs. Our products are being utilized in both commercial and defense applications where we provide systems for detecting mines in the water.

We provide a broad range of end-to-end undersea interconnect solutions to the offshore oil and gas, naval defense, oceanographic and telecom markets. We manufacture subsea, wet-mateable electrical and fiber-optic interconnect systems and subsea pressure vessel penetrators and connector systems with glass-to-metal seals. Our water-proof and splash-proof neoprene and glass reinforced epoxy connectors and cable assemblies are used in underwater equipment and submerged monitoring systems. We also manufacture subsea and topside pipeline corrosion and erosion monitoring detectors, subsea pressure and temperature sensors as well as flow integrity monitoring solutions for the oil and gas industry. These flow assurance sensors and equipment rely on our wet-mateable interconnect systems and our sensor feed-through systems. Our Teledyne Marine group and Teledyne Scientific Company continue to work collaboratively to improve the reliability of materials exposed to ultra deep-sea conditions.

Other marine products used by the U.S. Navy and commercial customers include acoustic modems for networked underwater communication and optical underwater cameras and LED lighting sources.

We manufacture complete AUVs. Our marine gliders use a silent buoyancy engine for propulsion that takes advantage of changes in buoyancy in conjunction with wings and tail steering to convert vertical motion to horizontal displacement, thereby propelling the system on a programmed route with very low power consumption. Glider applications range from oceanographic research to military persistent surveillance systems as part of a mobile underwater sensing and communication network. The modular design of our battery-powered, man-portable Gavia™ AUV allows for rapid sensor bay reconfiguration and battery replacement capability. Our Slocum gliders, as well as our ADCPs, are being used as part of the National Science Foundation's Ocean Observatories Initiative to collect physical, chemical, geological and biological data from the ocean and the seafloor on coastal, regional and global scales. Through the SeaBotix business, we design and manufacture Inspection Class remotely operated vehicles ("ROVs") used in maritime security, military, search and rescue, aquaculture, and scientific research applications.

Using our acoustic technology, we also provide quality control and package integrity systems under the Taptone® brand to the food and beverage, personal care and pharmaceutical industries.

Environmental Instrumentation

We offer a wide range of products used for environmental monitoring, instruments that enable measurement and monitoring of key air environmental parameters as well as gas purity and content for industrial and manufacturing applications, sensors for the measurement and monitoring of the physical and chemical properties of untreated water, and laboratory systems that improve sample acquisition, handling, and preparation for analysis.

Our instrumentation monitors trace levels of gases such as sulfur dioxide, carbon monoxide, oxides of nitrogen and ozone in order to measure the quality of the air we breathe. Our instrumentation also monitors particulate air pollution, and we supply environmental monitoring systems for the detection, measurement and automated reporting of air pollutants from industrial stack emissions. In November 2016, we acquired assets of IN USA, which expanded our product portfolio to include a range of ozone generators, ozone analyzers and other gas monitoring instruments. We serve the process control and monitoring needs of industrial plants with instruments that include gas analyzers, and vacuum and flow measurement devices. We were a pioneer in the development of precision trace oxygen analyzers, and we now manufacture a wide range of process gas and liquid analysis products for the measurement of process contaminants, hydrocarbons, combustibles, oil-in-water, moisture, pH and many other parameters. Our instrumentation is also used to detect a variety of water quality parameters. Our sampler products include portable, refrigerated and specialty samplers used in hazardous location applications. Flow meters include ultrasonic, submerged probe, bubbler and area velocity models. Laser technology is now part of our flow capabilities. Our custom analyzer systems provide turn-key solutions to complex process monitoring and/or control applications found in petrochemical and refinery facilities.

We provide laboratory instrumentation that complements our process or field environmental instrumentation. We manufacture laboratory instrumentation that automates the preparation and concentration of organic samples for the analysis of trace levels of volatile organic compounds by a gas chromatograph and mass spectrometer. We also provide laboratory instrumentation for the detection of total organic carbon and total nitrogen in water and wastewater samples. In addition, we provide inductively coupled plasma laboratory spectrometers, atomic absorption spectrometers, mercury analyzers and calibration standards. We also provide laboratory automation and sample introduction systems. Our advanced elemental analysis products are used by environmental and quality control laboratories to detect trace levels of inorganic contaminants in water, foods, soils and other environmental and geological samples. Our high-precision, high pressure syringe pumps measure process extraction rates of fluids ranging from liquefied gases to viscous tars. In addition, we manufacture liquid chromatography instruments and accessories for the purification of organic compounds, which since our 2015 acquisition of a product line include highly sensitive evaporative light scanning detectors. Our liquid chromatography customers include pharmaceutical laboratories involved in drug discovery and development. In December 2016, we acquired Hanson Research, a leading manufacturer of the systems used in testing of pharmaceutical products, including FDA-mandated dissolution rates of oral dosage forms and systems used in the research and development of topical creams, ointments, and gels containing active pharmaceutical ingredients.

Test and Measurement Instrumentation

Since our August 2012 acquisition of LeCroy Corporation ("LeCroy"), we develop, manufacture, sell and license high-performance oscilloscopes and high-speed protocol analyzers for various computer communication links. We also provide related test and measurement equipment, probes, accessories and application solutions. To a lesser extent, we provide extended warranty contracts, maintenance contracts and repairs and calibrations on our instruments after their warranties expire.

Our oscilloscopes are tools used by designers and engineers to measure and analyze complex electronic signals in order to develop high-performance systems, validate electronic designs and improve time to market. We offer eight families of real-time oscilloscopes, which address different needs: HDO4000/HDO6000/HDO8000/HDO9000, our 12-bit, high-definition oscilloscopes; LabMaster and WaveMaster, our industry leading high-end oscilloscope family; WavePro, which is targeted at the mid-to high-range performance sector; WaveRunner, designed for the general purpose and bench-top sector; WaveSurfer designed for users in the lower bandwidth bench-top sector of the market; WaveJet, designed for value-oriented users in the economy sector of the market; and WaveAce, our entry-level oscilloscope products.

In 2014, we released the world's first 100GHz real-time scope, aimed at applications such as high-speed optical communications, and we extended our line of 12-bit oscilloscopes to include an eight channel product with specialized capabilities for analyzing power and efficiency of motors and the associated drive circuitry. In 2015, we introduced the IQS series of Coherent Optical Receivers, featuring the industry's highest bandwidth - these products extend our technology leadership in optical modulation analysis.

Our protocol analyzers are used by designers and engineers to reliably and accurately monitor communications traffic and diagnose operational problems in a variety of communications devices to ensure that they comply with industry standards. In April 2016, we acquired Frontline, which allowed us to expand our protocol test portfolio into important wireless technologies like Bluetooth and 802.11 (Wi-Fi); and assets of Quantum Data, which broadened our protocol product offering to penetrate emerging video technologies like HDMI, SDI and other digital video technologies.

We manufacture torque sensors and automatic data acquisition systems that are used to test critical control valves in nuclear power and industrial plants.

Our test and measurement products are sold into a broad range of industry sectors, including computer, semiconductor, consumer electronics, power electronics, data storage, automotive, industrial, military, aerospace and telecommunications. We believe our test and measurement products address the needs of designers in all of these industry sectors in developing products that rely on increasingly complex electronic signals.

Digital Imaging

Our Digital Imaging segment includes high-performance sensors, cameras and systems, within the visible, infrared, ultraviolet and X-ray spectra for use in industrial, government and medical applications, as well as micro electro-mechanical systems ("MEMS"). It also includes our sponsored and centralized research laboratories benefiting government programs and businesses.

We design, develop and manufacture image capture products, primarily consisting of high-performance image sensors and digital cameras for use in industrial, scientific, medical and photogrammetry applications. We also design, develop and manufacture image processing products, primarily consisting of hardware and software for image processing in industrial and medical applications. We develop high-resolution, low-dose X-ray sensors for medical, dental and industrial applications. Our high-performance image sensors utilize both charge coupled device ("CCD") and complementary metal-oxide semiconductor ("CMOS") technology. In particular, our CMOS image sensing technology is used in our large flat panel detectors for X-ray imaging and in most of our sensors used for industrial machine vision applications. Our image processing software allows original equipment manufacturers ("OEMs") and systems integrators to develop vision applications using our image acquisition and processing hardware. Our smart camera products are user-friendly, cost-effective vision appliances for task-specific factory floor applications such as gauging, high-precision alignment, inspection, assembly verification and machine guidance. Our smart cameras are designed to be quickly deployed by technicians on the factory floor. The 2015 acquisition of Industrial Control Machines SA ("ICM") added lightweight X-ray sources for the inspection of materials and structures, ranging from light aviation parts to thick steel pipelines in harsh and extreme environments. ICM's mobile X-ray inspection systems are provided to government, security and explosive ordinance disposal personnel for the analysis of suspicious objects.

Additionally, we produce and provide manufacturing services for MEMS. The majority of our semiconductor manufacturing capacity is consumed by external customers with the remaining capacity applied towards supplying unique CCD and microbolometer (for long-wave infrared detection) fabrication services for our internal image sensor requirements.

Our Digital Imaging segment also provides Light Detection and Ranging ("LIDAR") systems for airborne terrestrial mapping, mobile mapping, bathymetry and laser-based 3D imaging applications through our now wholly-owned subsidiary, Optech. These imaging and mapping systems are used by commercial and government customers serving energy, natural resources and infrastructure applications. As a result of our acquisition of CARIS in April 2016, we also provide geospatial software designed for the hydrographic and marine community.

We provide research and engineering capabilities primarily in the areas of electronics, materials, optical systems, and information science to military, aerospace and industrial customers, as well as to various businesses throughout Teledyne. We receive funding from the Defense Advanced Research Products Agency ("DARPA"), the Intelligence Advanced Research Projects Activity ("IARPA"), and various other U.S. Department of Defense funding agencies, and we collaborate with researchers at universities and national laboratories to stay at the forefront of emerging technologies. We have developed high-speed electronics, MEMS sensors and actuators, advanced functional and structural materials, liquid-crystal based optical devices, and image processing algorithms.

We produce advanced focal plane arrays, sensors, and subsystems that cover a broad spectrum of frequencies from X-ray wavelengths to 18 micron long-wave infrared wavelengths. We develop image processing algorithms and manufacture compact mid-wave and short-wave infrared camera systems. We are a leader in the development and production of large format focal plane array sensors for astronomy, defense, commercial and space science markets.

We deliver advanced imaging solutions to the U.S. Department of Defense, National Aeronautics and Space Administration ("NASA"), prime system integrators, foreign space agencies and commercial customers. Our sensor technologies are on many of NASA's major astronomy missions (including Hubble, James Webb Space Telescope and Wide Field Infrared Survey Telescope), are on weather satellites, are orbiting Mars, are on spacecraft involved in missions to Jupiter and on asteroids, and can be found operating at nearly every major ground-based observatory telescope. In the U.S. defense arena, our sensors are integrated into several major systems for space surveillance, airborne surveillance, chemical detection and target identification. We have developed sensors, subassemblies and cameras for air- and ground-based applications, including hyperspectral sensors for long-wave infrared and for simultaneous visible-shortwave infrared applications. We provide focal plane electronics for our own sensors and for sensors produced by other companies. We integrate our low-noise, high-performance sensors into cameras for commercial laboratory instrumentation. We also design and manufacture advanced military laser eye protection spectacles and sensor protection filters.

Aerospace and Defense Electronics

Our Aerospace and Defense Electronics segment provides sophisticated electronic components and subsystems and communications products, including defense electronics, harsh environment interconnects, data acquisition and communications equipment for aircraft, and components and subsystems for wireless and satellite communications, as well as general aviation batteries.

We provide a range of microwave products ranging from components to highly integrated subsystems and solutions to our customers. Our helix traveling wave tubes, commonly called TWTs, used to provide broadband power amplification of microwave signals. Military applications include radar, electronic warfare and satellite communication. We make TWTs for commercial applications as well, such as electromagnetic compatibility test equipment and satellite communication terminals. We also provide high-power solid-state TWT replacement amplifiers and complete amplifiers that incorporate a TWT and a power supply.

We design and manufacture solid state radio frequency ("RF") and microwave components and subassemblies used in a wide variety of applications. As components which form the building blocks for electronic systems, we produce amplifiers, voltage-controlled oscillators, YIGs, BAWs, low-noise amplifiers ("LNAs"), microwave mixers, and detectors using LDMOS, GaAs, GaN, InP, and SiC technologies. These components form the basis for our line of solid state power amplifiers, RF converters, and modems which are used in systems that provide communications links between ground stations, mobile units, UAVs, and orbiting satellites. Such products are also used in mobile telephone, TV broadcast and commercial data communications networks. In addition, we also provide higher level microwave subsystems and systems for electronic warfare, UAV, radar and military communication applications.

We supply a variety of connectors and cable assemblies, including specialized high voltage connectors and subassemblies and coax microwave cable and connectors, for defense, aerospace and industrial applications. Additionally, we produce pilot helmet mounted display components and subsystems for the Joint Helmet Mounted Cueing System ("JHMCS") used in the F-15, F-16 and F-18 aircrafts. The JHMCS system is a multi-role system designed to enhance pilot situational awareness and provides visual control of aircraft targeting systems and sensors. We manufacture microprocessor-controlled aircraft ejection seat sequencers and related support elements to military aircraft programs. We also provide initiators and electronic safe and arm devices for use in military applications.

We provide specialty electronic manufacturing services. We develop and manufacture custom microelectronic modules that provide both high reliability and extremely dense packaging for military applications. We also develop custom tamper-resistant microcircuits designed to provide enhanced security in military communication. We serve the market for high-mix, low-volume manufacturing of sophisticated military electronics equipment.

We supply electromechanical relays, solid state power relays and coaxial switching devices to military, aerospace and other industrial markets. Applications include microwave and wireless communication infrastructure, RF and general broadband test equipment, test equipment used in semiconductor manufacturing, and industrial and commercial machinery and control equipment. On commercial aircraft, our solid state and electromechanical relays are used in a variety of applications, including jet engine fuel control, management of control surfaces and other on-board applications.

We are a leading supplier of digital flight data acquisition and analysis systems to the civil aviation market. These systems acquire data for use by the aircraft's flight data recorder as well as record additional data for the airline's operation, such as aircraft and engine condition monitoring. We provide the means to transfer this data, using Teledyne's patented wireless technology, from the aircraft to the airline operation center. We also design and manufacture airborne networking products, including servers, as well as aircraft data loading equipment, flight line maintenance terminals and data distribution software used by commercial airlines and the U.S. military. In 2013, the Boeing Company awarded us a single source contract to develop and supply the next generation of aircraft data acquisition and information management systems for the majority of future Boeing commercial aircraft. The first of these products, a network file server, was certified in January 2016 and production deliveries have begun. An enhanced digital flight data acquisition unit for the new Boeing 737MAX aircraft is expected to be certified in the first quarter of 2017, with production deliveries to follow soon after. We also provide lead acid aircraft batteries for general aviation, and business and light jet applications.

Engineered Systems

Our Engineered Systems segment provides innovative systems engineering and integration and advanced technology development as well as complex manufacturing solutions for defense, space, environmental and energy applications. This segment also designs and manufactures electrochemical energy systems and small turbine engines.

Teledyne Brown Engineering, Inc. is a well-recognized whole life-cycle space, missile defense, marine systems, environmental and energy company. With changes in U.S. fiscal policy, we have been working to shift its focus from chiefly supporting U.S. Government space and defense programs to increasing its commercial portfolio, specifically with the commercialization of space.

We lead and support air and missile defense programs, including the Objective Simulation Framework ("OSF") and Test Execution Services and Launch Augmentation programs ("TESTLA"). As the Missile Defense Agency ("MDA") prime contractor for the OSF contract, we design, develop, test, implement and maintain the OSF. The OSF is being designed to support full scale simulations, ground tests and live fire events throughout the life cycle of the Ballistic Missile Defense System. Under the 2013-awarded TESTLA contract, we will continue development, manufacturing and integration of product solutions in support of the war-fighter.

We specialize in marine systems design and manufacturing. For the U.S. Special Operations Command, we are the prime contractor engaged to design, develop, test, manufacture and sustain the Shallow Water Combat Submersible ("SWCS") vehicle to replace the current SEAL Delivery Vehicle. With the design of the SWCS engineering development model vehicle having been completed in 2015 and the development test phase having been completed in 2016, we began low-rate initial production in late 2016. We are producing the Littoral Battlespace Sensing Glider ("LBS-G") system for the U.S. Navy Program Executive Office - Command, Control, Communications, Computers and Intelligence ("PEO-C4I"). Teledyne Webb Research is the glider developer and manufacturer on the LBS-G program. We manufacture gun mounts for the Littoral Combat Ship program. Under contract to Raytheon Company, we continue to manufacture advanced mine detection and neutralization systems.

We are active in U.S. space programs and continue to play a vital role in the science operations area of the International Space Station ("ISS") program. We provide 24-hour-per-day payload operations in the ISS Payload Operations and Integration Center located at NASA's Marshall Space Flight Center ("MSFC"). Under contract with MSFC, we have designed, developed, and we are manufacturing, assembling, and testing the Launch Vehicle Stage Adapter, a critical element of NASA's Space Launch System. In 2012, NASA awarded us a cooperative agreement to foster the commercial utilization of the ISS. Under this agreement, we have developed a commercial platform that will host payloads for earth imaging and other scientific applications. The platform known as the Multi-User System for Earth Sensing ("MUSES") is scheduled to launch in mid-2017. We also design, develop, and manufacture components for liquid rocket engines, scientific payloads and human space flight vehicles.

We operate a full service radiological analysis laboratory in Knoxville, Tennessee, which principally supports nuclear power plants in the United States. We also manage and operate a separation, purification and analysis of atmospheric samples laboratory for the U.S. Government, as well as, design, build, and test systems for processing the nation's enriched uranium at the United States Department of Energy National Nuclear Security Complex. Additionally, we provide engineering and manufacturing for customers in the commercial nuclear market.

Continuing our historic facilities and plant management services to the commercial arena, in December 2015, we extended by another three years our lab and office facility management contract with The Dow Chemical Company. We currently lead on-site and off-site management and support of research services at three Dow Chemical research facilities.

We manufacture products that are primarily highly engineered and high-quality machined and metal fabricated components and assemblies for external customers across the spectrum of our core business base, including NASA, the U.S. Department of Defense customers and the U.S. Department of Energy, as well as commercial customers. Through our U.K.-based operations, we manufacture advanced composites for the government and commercial aviation customers.

We manufacture hydrogen/oxygen gas generators used worldwide in electrical power generation plants, semiconductor manufacturing, optical fiber production, chemical processing, specialty metals, float glass and other industrial processes. Our sales of hydrogen generators have been primarily in developing countries and domestic applications where delivered merchant gas is not practical.

We provide advanced thermoelectric material technology and generators for challenging applications. The NASA Curiosity rover is powered by a thermoelectric generator designed and built by Teledyne Energy Systems, Inc., and we are developing the next generation system based on advanced thermoelectric materials.

We provide leading edge battery and fuel cell energy technology solutions for use in U.S. Government programs. These are lightweight compact systems for underwater vehicles, aircraft, launch vehicles, and spacecraft. Both technologies can be customized to meet challenging applications for extended duration missions.

We design, develop and manufacture small turbine engines primarily used in tactical cruise missiles for military markets. Our engines power the Boeing/U.S. Navy Harpoon and Standoff Land Attack Missile systems, and we are the sole source provider of engines for the baseline Lockheed Martin/U.S. Air Force Joint Air-to-Surface Standoff Missile ("JASSM"). We also continue to work on advanced technology for small turbine engines and components for programs sponsored by the U.S. Air Force Research Laboratory.

Customers

We have hundreds of customers in the various industries we serve. No commercial customer accounted for more than 10% of any segment sales, during 2016, 2015 or 2014. No commercial customer in 2016 accounted for more than 2.0% of total sales. In 2015 and 2014, our largest commercial customer, a customer of our Instrumentation segment, accounted for 2.3% and 2.8% of total sales, respectively.

Sales to international customers accounted for approximately 43% of total sales in 2016, compared with 44% in 2015 and 45% in 2014. In 2016, we sold products to customers in over 100 foreign countries. Approximately 90% of our sales to foreign-based customers were made to customers in 24 foreign countries. In 2016, the top five countries for international sales were China, the United Kingdom, Germany, South Korea and Japan and constituted approximately 20% of our total sales.

Approximately 27%, 26% and 25% of our total sales for 2016, 2015 and 2014, respectively, were derived from contracts with agencies of, and prime contractors to, the U.S. Government. Information on our sales to the U.S. Government, including direct sales as a prime contractor and indirect sales as a subcontractor, is as follows (in millions):

U.S. Government sales by segment:	2016	2015	2014
Instrumentation	**$ 74.4**	$ 61.2	$ 38.6
Digital Imaging	**73.1**	78.9	102.2
Aerospace and Defense Electronics	**210.4**	223.5	245.3
Engineered Systems	**219.8**	234.4	221.8
Total U.S. Government sales	**$577.7**	$598.0	$607.9

Our principal U.S. Government customer is the U.S. Department of Defense. These sales represented 21%, 19% and 20% of our total sales for 2016, 2015 and 2014, respectively. In 2016, our largest program with the U.S. Government was the Mission Operations and Integration contract with the NASA Marshall Space Flight Center which represented 1.5% of our total sales. In 2015, our largest program with the U.S. Government was the Engineering Solutions and Prototyping contract with the NASA Marshall Space Flight Center, which represented 1.5% of our total sales. In 2014, our largest program with the U.S. Government was the Objective Simulation Framework contract with the Missile Defense Agency, which represented 1.3% of our total sales.

As described under risk factors, there are risks associated with doing business with the U.S. Government. In 2016, approximately 54% of our U.S. Government prime contracts and subcontracts were fixed-price type contracts, compared to 54% in 2015 and 58% in 2014. Under these types of contracts, we bear the inherent risk that actual performance cost may exceed the fixed contract price. Such contracts are typically not subject to renegotiation of profits if we fail to anticipate technical problems, estimate costs accurately or control costs during performance. Additionally, U.S. Government contracts are subject to termination by the U.S. Government at its convenience, without identification of any default. When contracts are terminated for convenience, we recover costs incurred or committed, settlement expenses and profit on work completed prior to termination. We had one U.S. Government contract terminated for convenience in 2016, compared with eight in 2015 and three in 2014.

Our total backlog of confirmed orders was approximately $916.4 million at January 1, 2017, compared with $802.8 million at January 3, 2016, and $944.6 million at December 28, 2014. We expect to fulfill 91% of such backlog of confirmed orders during 2017.

Seasonality

No material portion of our business is considered to be seasonal.

Raw Materials and Suppliers

Generally, our businesses have experienced minimal fluctuations in the supply of raw materials, but not without some price volatility. While some of our businesses provide services, for those businesses that sell hardware and product, a portion of the value that we provide is labor-oriented, such as design, engineering, assembly and test activities. In manufacturing our products, we use our own production capabilities and also third party suppliers and subcontractors, including international sources. Some of the items we use for the manufacture of our products, including certain gyro components for some marine navigation applications, certain magnets and helix wire for our traveling wave tubes, certain infrared detectors substrates and certain ceramics and molding compounds used in our sonar systems, as well as certain scintillator materials used in the production of our X-ray detectors, are purchased from limited or single sources, including international sources, due to technical capability, price and other factors. While over the years we have not experienced much difficulty in procuring raw materials, components, sub-assemblies and other supplies required in our manufacturing processes, disruption in the global economy and financial markets could trigger increased pricing or otherwise affect our suppliers and negatively impact our ability to procure such supplies.

Sales and Marketing

Our sales and marketing approach varies by segment and by products within our segments. A shared fundamental tenet is the commitment to work closely with our customers to understand their needs, with an aim to secure preferred supplier and longer-term relationships.

Our segments use a combination of internal sales forces, third-party distributors and commissioned sales representatives to market and sell our products and services. Our Teledyne Instruments companies and other businesses have been working over the years to consolidate or share internal sales and servicing efforts. Several Teledyne businesses have been marketing and selling products collaboratively to similar customers to promote "one-stop" shopping under singular "brand" names, including Teledyne Marine, Teledyne Oil & Gas, Teledyne Water Quality and Teledyne Microwave Solutions.

Products are also advertised in appropriate trade journals and by means of various websites. To promote our products and other capabilities, our personnel regularly participate in relevant trade shows and professional associations.

Many of our government contracts are awarded after a competitive bidding process in which we seek to emphasize our ability to provide superior products and technical solutions in addition to competitive pricing.

Through Teledyne Technologies International Corp. and other subsidiaries, we have established offices in foreign countries to facilitate international sales for various businesses. Locations include Brazil, China, France, Germany, Italy, Japan, Malaysia, Singapore, South Korea, Switzerland and the United Arab Emirates.

Competition

We believe that technological capabilities and innovation and the ability to invest in the development of new and enhanced products are critical to obtaining and maintaining leadership in our markets and the industries in which we compete. Although we have certain advantages that we believe help us compete effectively in our markets, each of our markets is highly competitive. With regard to our defense businesses, it is common in the defense industry for work on programs to be shared among a number of companies, including competitors. In any event, because of the diversity of products sold and the number of markets we serve, we encounter a wide variety of competitors, none of which we believe offer all of the same product and service lines or serve all of the same markets as we do. Our businesses vigorously compete on the basis of quality, product performance and reliability, technical expertise, price and service. Many of our competitors have, and potential competitors could have, greater name recognition, a larger installed base of products, more extensive engineering, manufacturing, marketing and distribution capabilities and greater financial, technological and personnel resources than we do.

Research and Development

Our research and development efforts primarily involve engineering and design related to improving existing products and developing new products and technologies in the same or similar fields. We spent a total of $458.3 million in 2016, $476.6 million in 2015 and $428.8 million in 2014 on research and development and bid and proposal costs. Customer-funded research and development, most of which was attributable to work under contracts with the U.S. Government, represented approximately 63%, 66% and 61% of total research and development and bid and proposal costs for 2016, 2015 and 2014, respectively.

In 2016, we incurred $167.7 million in Company-funded research and development and bid and proposal costs. We expect the level of Company-funded research and development and bid and proposal costs to be approximately $180.5 million in 2017.

Intellectual Property

While we own and control various intellectual property rights, including patents, trade secrets, confidential information, trademarks, trade names, and copyrights, which, in the aggregate, are of material importance to our business, we believe that our business as a whole is not materially dependent upon any one intellectual property or related group of such properties. We own several hundred active patents and are licensed to use certain patents, technology and other intellectual property rights owned and controlled by others. Similarly, other companies are licensed to use certain patents, technology and other intellectual property rights owned and controlled by us.

Patents, patent applications and license agreements will expire or terminate over time by operation of law, in accordance with their terms or otherwise. We do not expect the expiration or termination of these patents, patent applications and license agreements to have a material adverse effect on our business, results of operations or financial condition.

Employees

We consider our relations with our employees to be good. At January 1, 2017, our total workforce consisted of approximately 8,970 employees, of which approximately 6,560 employees were located in the United States.

Executive Officers of the Registrant

Teledyne's executive management includes:

Name and Title	Age	Principal Occupations Last 5 Years
Executive Officers:		
Robert Mehrabian* Chairman, President and Chief Executive Officer; Director	75	Dr. Mehrabian has served as Chairman, President and Chief Executive Officer of Teledyne for more than five years.
Aldo Pichelli* Chief Operating Officer	65	Mr. Pichelli has been the Chief Operating Officer of Teledyne since October 6, 2015. Prior to his promotion, Mr. Pichelli had been an Executive Vice President of Teledyne having responsibility for the Instrumentation and Aerospace and Defense Electronics segments since July 1, 2013. Prior to that, he had been President and Chief Operating Officer of Teledyne's Instrumentation and Aerospace and Defense Electronics segments since January 2, 2011.
Melanie S. Cibik* Senior Vice President, General Counsel, Chief Compliance Officer and Secretary	57	Miss Cibik has been Senior Vice President, General Counsel and Secretary since September 1, 2012 and Chief Compliance Officer since August 22, 2016. For more than five years prior to her promotion on September 1, 2012, she had been Vice President, Associate General Counsel and Assistant Secretary.
Susan L. Main* Senior Vice President and Chief Financial Officer	58	Ms. Main has been Senior Vice President and Chief Financial Officer of Teledyne since November 19, 2012. For more than five years prior to that, she had been Vice President and Controller of Teledyne.
Cynthia Belak* Vice President and Controller	60	Ms. Belak has been Vice President and Controller of Teledyne since May 6, 2015. Prior to her promotion, Ms. Belak had been Vice President, Business Risk Assurance of Teledyne since January 24, 2012. Prior to that, since January 4, 2010, Ms. Belak had been Group Controller within the Aerospace and Defense Electronics segment.
Jason VanWees* Senior Vice President, Strategy and Mergers & Acquisitions	45	Mr. VanWees has been Senior Vice President, Strategy and Mergers & Acquisitions since July 1, 2013. Prior to his promotion, he had been Vice President, Strategy and Mergers & Acquisitions since September 1, 2012. Prior to that, he had been Vice President, Corporate Development and Investor Relations of Teledyne for more than five years.
George C. Bobb III* Vice President Contracts, Information Technology and Selected Operations and Deputy General Counsel for Litigation	42	Mr. Bobb has been Vice President-Information Technology and Selected Operations and Deputy General Counsel for Litigation of Teledyne since August 22, 2016. From July 22, 2014 to August 22, 2016, he was Chief Compliance Officer, Vice President-Information Technology and Selected Operations and Deputy General Counsel for Litigation of Teledyne. Prior to that he had been Vice President, Chief Compliance Officer and Deputy General Counsel for Litigation since September 1, 2012. Prior to that, he had been an Associate General Counsel of Teledyne and the General Counsel of the Engineered Systems and Digital Imaging segments since August 2011.

Name and Title	Age	Principal Occupations Last 5 Years
Other Officers:		
Carl Adams Vice President, Business Risk Assurance	47	Mr. Adams has been Vice President, Business Risk Assurance of Teledyne since May 6, 2015. Prior to that, upon joining Teledyne on April 22, 2015, he was Senior Director, Finance. From March 2014 to March 2015, he was the Chief Financial Officer and Vice President of NeuroSigma, Inc., a developer of neurological disorder treatments. From January 2014 to March 2014, he was the Corporate Controller and Vice President for NeuroSigma, Inc. From April 2011 to January 2014, he was a founding partner of Technical Accounting and Controllership Solutions, LLP .
Stephen F. Blackwood Vice President and Treasurer	54	Mr. Blackwood has been Vice President and Treasurer of Teledyne for more than five years.
Edwin Roks Vice President and President, Teledyne DALSA	52	Mr. Roks has been a Vice President of Teledyne since January 2, 2014 and President of Teledyne DALSA, Inc. since October 6, 2015. From January 2, 2014 to October 6, 2015, Mr. Roks had been the Chief Technology Officer of Teledyne. Prior to that since April 2010, Mr. Roks served as Executive Vice President and General Manager of the professional imaging division of Teledyne DALSA, Inc. (formerly known as DALSA Corporation).

* Such officers are subject to the reporting and other requirements of Section 16 of the Securities Exchange Act of 1934, as amended.

Dr. Robert Mehrabian and Teledyne are parties to a Fifth Amended and Restated Employment Agreement dated as of October 22, 2013, which was amended on September 28, 2015. Under the amended agreement, we will employ Dr. Mehrabian as the Chairman, President and Chief Executive Officer of Teledyne through December 31, 2019, at an annual base salary that is currently $975,000. The agreement provides that Dr. Mehrabian is entitled to participate in Teledyne's annual incentive bonus plan ("AIP") and other executive compensation and benefit programs. The agreement provides Dr. Mehrabian with a non-qualified pension arrangement, under which Teledyne will pay him annually starting six months following his retirement and for a period of 10 years, as payments supplemental to any accrued pension under our qualified pension plan, an amount equal to 50% of his base compensation as in effect on retirement.

Eleven current members of management (including the named executives) have entered into change of control severance agreements. The agreements have a three-year, automatically renewing term, except as noted below. The executive is entitled to severance benefits if (1) there is a change in control of the Company and (2) within three months before or 24 months after the change in control, either we terminate the executive's employment for reasons other than cause or the executive terminates the employment for good reason. "Severance benefits" currently consist of:

- A cash payment equal to three times in the case of Dr. Mehrabian or two times in the other cases the sum of (i) the executive's highest annual base salary within the year preceding the change in control and (ii) the Annual Incentive Plan bonus target for the year in which the change in control occurs or the average actual bonus payout for the three years immediately preceding the change in control, whichever is higher.
- A cash payment for the current Annual Incentive Plan bonus cycle based on the fraction of the year worked times the Annual Incentive Plan target objectives at 100%.
- Payment in cash for unpaid performance share program awards, assuming applicable goals are met at 120% of performance targets.
- Continued equivalent health and welfare (e.g., medical, dental, vision, life insurance and disability) benefits at our expense for a period of up to 36 months (24 months in some agreements) after termination (with the executive bearing any portion of the cost the executive bore prior to the change in control); provided, however, such benefits would be discontinued to the extent the executive receives similar benefits from a subsequent employer.
- Removal of restrictions on restricted stock issued under our restricted stock award programs.
- Full vesting under the Company's pension plans (within legal parameters) such that the executive shall be entitled to receive the full accrued benefit under all such plans in effect as of the date of the change in control, without any actuarial reduction for early payment.
- Up to $25,000 ($15,000 in some agreements) reimbursement for actual professional outplacement services.
- Immediate vesting of all stock options, with options being exercisable for the full remainder of the term.
- There is no "gross up payment" to hold the executive harmless against the impact, if any, of federal excise taxes imposed on executive as a result of "excess parachute" payments as defined in Section 280G of the Internal Revenue Code. The executive will receive the better of, on an after-tax basis, (a) the unreduced excess parachute payment with no tax gross up payment, or (b) a parachute payment reduced to a level below which an excise tax is imposed.

- Certain payments are deferred for six months following a separation of service to assure compliance with Section 409A of the Internal Revenue Code.

The Company has entered into individual Indemnification Agreements with directors and certain officers and executives of Teledyne, including those members of Executive Management listed above. The Indemnification Agreements provide the directors and executives who are parties to the agreements with a stand-alone contractual right to indemnification and expense advancement to the greatest extent allowable under Delaware law. The Indemnification Agreements also provide:

- In a third-party proceeding, an indemnitee is entitled to indemnification if the indemnitee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Company and, if in a criminal action or proceeding, if the indemnitee had no reason to believe that his or her conduct was unlawful. In a third party proceeding, the indemnification obligation covers reasonable expenses, judgment fines, and amounts paid in settlement actually and reasonably incurred by the indemnity.
- In proceedings by or in the name of the Company (e.g., derivative suits), an indemnitee is entitled to indemnification if the indemnitee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Company. In derivative suits, the indemnification obligation covers reasonable expenses, but in proceedings where the Company is alleging harm caused by the indemnitee, the indemnitee would generally not be entitled to be indemnified for judgments, fines and amounts paid in settlement (otherwise the Company would effectively not recover any damages), unless a Delaware or other court determines otherwise despite the finding of liability.
- The Company has an obligation to advance, on an unsecured and interest free basis, reasonable expenses incurred by the indemnitee within 30 days of the indemnitee's request. The indemnitee does not need to meet any standard of conduct to be entitled to advancement of expenses and there is no determination requirement to be made by the Board in connection with the advancements of expenses. An indemnity must repay any amounts advanced if it ultimately determined that the indemnity is not entitled to indemnification.

Our indemnification obligations do not cover the following situations: (1) where indemnification payments have been made under director's and officer's insurance or other indemnification provisions; (2) where the claim is based on disgorgement of short-swing profits under Section 16(b) of the Exchange Act; (3) where the claim is based on reimbursement by the indemnitee to the Company of a bonus or other incentive-based or equity-based compensation if required under the Exchange Act (e.g., in connection with a restatement as a result of the Company's noncompliance with the financial reporting requirements required by Section 304 of the Sarbanes-Oxley Act); or (4) where the proceeding is initiated by the indemnitee (other than proceedings that are consented to by the Board or that the indemnitee initiates against the Company to enforce the Agreement).

Under the Indemnification Agreements, in the event of a change in control or we reduce or do not renew our director's and officer's insurance coverage, we are required to purchase (or cause the acquirer or successor to the Company to purchase or maintain) a six-year tail policy, subject to a 200% premium cap. The agreements continue until the later of (i) 10 years after the indemnitee ceases to serve as a director or officer, and (ii) one year following the final termination of any proceeding subject to the agreement.

Available Information

Our Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q, any Current Reports on Form 8-K, and any amendments to these reports, are available on our website as soon as reasonably practicable after we electronically file such materials with, or furnish them to, the Securities and Exchange Commission (the "SEC"). The SEC also maintains a website that contains these reports and other information we file, including our proxy statements, at www.sec.gov. Any materials we file with the SEC may be viewed at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, our Corporate Governance Guidelines, our Global Code of Ethical Business Conduct, our Codes of Ethics for Financial Executives, Directors and Service Providers and the Charters of the standing committees of our Board of Directors are available on our website. We intend to post any amendments to or waivers of these policies, guidelines and charters on our website. Our website address is www.teledyne.com. This information on our website is available free-of-charge. Alternatively, if you would like a paper copy of any report we file with the SEC (without exhibits) or other document, please write to Melanie S. Cibik, Senior Vice President, General Counsel, Chief Compliance Officer and Secretary, at Teledyne Technologies Incorporated, 1049 Camino Dos Rios, Thousand Oaks, California 91360-2362, and a copy of such requested document will be provided to you, free-of-charge.

Item 1A. Risk Factors

Risk Factors; Cautionary Statement as to Forward-Looking Statements

The following text highlights various risks and uncertainties associated with Teledyne. These factors could materially affect "forward-looking statements" (within the meaning of the Private Securities Litigation Reform Act of 1995) that we may make from time to time, including forward-looking statements contained in "Item 1. Business" and "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Form 10-K and in Teledyne's 2016 Annual Report to Stockholders. It is not possible for management to predict all such factors, and new factors may emerge. Additionally, management cannot assess the impact of each such factor on Teledyne or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

A new global recession, continued economic uncertainty in Europe or an economic downturn in China may adversely affect us.

If another global recession emerges, if economic uncertainty in Europe continues or worsens, or if economic growth in China substantially slows, we may experience declines in revenues, profitability and cash flows from reduced orders, payment delays, collection difficulties, increased price pressures for our products, increased risk of excess and obsolete inventories or other factors caused by the economic problems of customers. If negative conditions in the global credit markets prevent our customers' access to credit or render them insolvent, orders for our products may decrease, which would result in lower revenue. Likewise, if our suppliers face challenges in obtaining credit, in selling their products, or otherwise in operating their businesses or remaining solvent, they may become unable to offer the materials we use to manufacture our products. These events could adversely impact our ability to manufacture affected products and could also result in reductions in our revenue, increased price competition, and increased operating costs, which could adversely affect our business, financial condition, results of operations, and cash flows.

We develop and manufacture products for customers in the energy exploration and production markets, domestic and international commercial aerospace markets, the semiconductor industry, the consumer electronics, telecommunications and automotive industries, each of which has been cyclical, exhibited rapid changes and suffered from fluctuating market demands. A cyclical downturn in these markets may materially affect future operating results. In 2015 and 2016, for example, our revenue and income were negatively impacted by the downturn in energy markets.

In addition, we sell products and services to customers in industries that are sensitive to the level of general economic activity and consumer spending habits and in more mature industries that are sensitive to capacity. Adverse economic conditions affecting these industries may reduce demand for our products and services, which may reduce our revenues, profits or production levels. For example, in 2014 several of our major customers reduced their marine seismic operations in connection with a general slowdown in the marine seismic exploration industry. Some of our businesses serve industries such as power generation and petrochemical refining, which may be negatively impacted by reductions in global capital expenditures and manufacturing capacity.

A material amount of our total revenues is derived from companies in the oil and gas industry, especially the offshore oil and gas industry, a historically cyclical industry with levels of activity that are significantly affected by the levels and volatility of oil and gas prices.

A material amount of our total revenues is derived from customers in or connected to the oil and gas exploration, development and production, especially the offshore oil and gas industry. One of our largest commercial customers is in the offshore oil and gas industry and accounted for 2.3% and 2.8% of total sales in 2015 and 2014, respectively. In 2016, no commercial customer in the offshore oil and gas industry accounted for more than 1% of total sales. The oil and gas industry is a historically cyclical industry characterized by significant changes in the levels of exploration and development activities. In 2014 and again in 2015 and 2016, the price of Brent crude oil experienced dramatic declines, from a high of $116 in June 2014, to a low of $27 in January 2016. Oil and gas prices, and market expectations of potential changes in those prices, significantly affect the levels of those activities. Worldwide political, economic and military events have contributed to oil and gas price volatility and are likely to continue to do so in the future. Any prolonged reduction in the overall level of offshore oil and gas exploration and development activities, whether resulting from changes in oil and gas prices or otherwise, could materially and adversely affect our financial condition and results of operations of our businesses within our Instrumentation segment. Some factors that have affected and are likely to continue affecting oil and gas prices and the level of demand for our services and products include the following:

- worldwide demand for oil and gas;
- general economic and business conditions and industry trends;
- the ability of the Organization of Petroleum Exporting Countries, or OPEC, to set and maintain production levels;
- the level of production by non-OPEC countries;
- the ability of oil and gas companies to generate funds for capital expenditures;

- domestic and foreign tax policy;
- laws and governmental regulations that restrict exploration and development of oil and gas in various offshore jurisdictions;
- laws and governmental regulation that restrict the use of hydraulic fracturing;
- technological changes;
- the political environment of oil-producing regions;
- the price and availability of alternative fuels; and
- climate change regulation that provide incentives to conserve energy or use alternative energy sources.

Teledyne manufactures seismic sources, interconnects and data acquisition products used in offshore energy exploration. When crude oil and natural gas prices are low, the level of marine seismic exploration activity typically decreases, potentially resulting in reduced demand for our products used in offshore energy exploration. In addition, a decline in the level of capital spending by oil and natural gas companies may result in a reduced pace of development of new energy reserves, which could adversely affect demand for our products related to energy production, and, in certain instances, result in the cancellation, modification or rescheduling of existing orders.

Risks related to the proposed acquisition of e2v:

With the pending acquisition of e2v, the risk profile of Teledyne may differ materially from prior years, which could materially change our results of operations.

On December 12, 2016, Teledyne and e2v reached agreement on the terms of a recommended cash acquisition to be made by Teledyne for the ordinary share capital of e2v by means of a Scheme of Arrangement. At announcement, the aggregate enterprise value for the transaction is expected to be approximately £627.1 million (or approximately $788.9 million) taking into account e2v stock options and net debt. It is expected that, subject to the satisfaction or waiver of all relevant conditions, the acquisition will be completed in the first half of calendar 2017. e2v is a leading designer, developer and manufacturer of radio frequency ("RF") power systems, imaging solutions and semiconductors to the aerospace, security and defense, space, medical, scientific and industrial markets. e2v is headquartered in the United Kingdom, with key operations in the United Kingdom, France, the United States and Spain.

As discussed below, while there are risks associated with acquisitions generally, including closing and integration risks, there are additional risks associated with owning and operating businesses internationally, including those arising from U.S. and foreign policy changes, political instability, and exchange rate fluctuations. With this acquisition, a greater percentage of Teledyne's revenues and expenses will arise from international sources. The acquisition will also significantly expand Teledyne's international employee base and manufacturing footprint. As a result of the acquisition of e2v, the financial results of the combined company will be more exposed to currency exchange rate fluctuations and an increased proportion of assets, liabilities and earnings will be denominated in non-U.S. dollar currencies. The combined company will present its financial statements in U.S. dollars and will have a significant proportion of net assets, expenses and income in non-U.S. dollar currencies, primarily the British pound, the Canadian dollar and the euro. The combined company's financial results and capital ratios will therefore be sensitive to movements in foreign exchange rates. A depreciation of non-U.S. dollar currencies relative to the U.S. dollar could have an adverse impact on the combined company's financial results.

While most of the products made and markets served by e2v are complementary to Teledyne, the acquisition of e2v will expand the size of Teledyne's Digital Imaging segment relative to its other segments. Continued innovation and research and development efforts will be required to maintain e2v's leadership position in imaging products and semiconductor production. e2v's business also may be more capital intensive than many of Teledyne's other businesses, increasing Teledyne's capital requirements. Approximately one quarter of e2v's revenue relates to long-term contracts, many of which involve advancements in technology and are fixed price. As discussed below, an inherent risk in fixed price contracts is that actual performance costs may exceed the projected costs on which the contracts are agreed. The failure to anticipate technical problems, estimate costs accurately or control costs during the performance of a fixed price contract can reduce its profitability or result in a loss.

We may not realize all of the anticipated benefits of the proposed acquisition of e2v, or those benefits may take longer to realize than expected. We may also encounter significant unexpected difficulties in integrating the two businesses.

Our ability to realize the anticipated benefits of the pending acquisition of e2v will depend, to a large extent, on our ability to integrate our business with e2v's business. Combining two independent businesses is a complex, costly and time-consuming process. As a result, we will be required to devote significant management attention and resources to integrating the business practices and operations of the company and e2v. The integration process may disrupt the combined business and, if implemented ineffectively, could preclude the realization of the full benefits of the acquisition that are currently expected. Our failure to meet the challenges involved in integrating the two businesses and to realize the anticipated benefits of the proposed acquisition could cause an interruption of, or a loss of momentum in, the activities of e2v and Teledyne and could adversely affect our results of operations. In addition, the overall integration of the businesses may result in material unanticipated problems, expenses, liabilities, competitive responses, loss of customer relationships, and diversion of management's attention. In addition, even if the operations of the businesses of the Teledyne and e2v are integrated successfully, we may not realize the full benefits of the proposed acquisition, including the synergies, cost savings or sales or growth opportunities that we expect, or the full benefits may not be achieved within the anticipated time frame, or at all. Additional unanticipated costs may be incurred in the integration of the two businesses. All of these factors could adversely affect our earnings, decrease or delay the expected accretive effect of the proposed acquisition, or negatively impact the price of our common stock. As a result, we cannot assure that the combination of Teledyne's and e2v's businesses will result in the realization of the full benefits anticipated from the proposed acquisition.

In order to close the proposed acquisition of e2v, we will need to incur a significant level of debt that could have significant consequences for our business and any investment in our securities.

The proposed acquisition of e2v will be Teledyne's largest acquisition to date. In connection with the announcement of the proposed acquisition, in December 2016, we entered into a £625.0 million bridge credit facility to fund the acquisition and related transaction costs, in order to meet the requirement under the U.K. City Code on Takeovers and Mergers that we have sufficient and certain resources available to fund the consideration for the acquisition. In January 2017, we amended our revolving credit agreement to allow us to use that facility to fund part of the consideration in lieu of the bridge credit facility. We intend to use the proceeds of the term loans and the senior notes to fund the consideration and transaction costs for the proposed acquisition. The indebtedness we have incurred and expect to incur to fund the proposed acquisition could have significant consequences for our business and any investment in our common stock, including:

- increasing our vulnerability to adverse economic, industry or competitive developments;
- reducing our ability to use our cash flow to fund our operations, capital expenditures and future business opportunities and stock repurchases;
- limiting our ability to making large acquisitions;
- limiting our ability to obtain additional financing for working capital, capital expenditures, product development, debt service requirements, acquisitions and general corporate or other purposes; and
- limiting our flexibility in planning for, or reacting to, changes in our business or market conditions and placing us at a competitive disadvantage compared to our competitors who are less highly leveraged and who, therefore, may be able to take advantage of opportunities that our leverage prevents us from exploiting.

The pending acquisition of e2v is subject to various closing conditions, as well as other uncertainties, and there can be no assurances as to whether and when it may be completed. Failure to consummate the proposed acquisition could negatively impact our stock price and our future business and financial results.

The consummation of the proposed acquisition of e2v is subject to certain customary conditions. A number of the remaining conditions are not within our or e2v's control, and it is possible that such conditions may prevent, delay or otherwise materially adversely affect the completion of the acquisition. At meetings held in January 2017, e2v shareholders voted in favor of the resolution to approve the scheme of arrangement and voted to pass a special resolution to approve the implementation of the scheme. The waiting periods required under both the U.S. Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and in respect of the e2v's U.S. State Department's ITAR registration have expired. Clearance or expiration of the waiting period under German merger control laws remains outstanding. After discussions with the German authorities, e2v and Teledyne submitted a revised application for clearance on February 24, 2017 in respect of the acquisition. The German authorities have one month to review such revised submission. Clearance from the French Ministry of Economy and Finance and the French Ministry of Defense in respect of the acquisition also remains outstanding.

Under the U.K. City Code on Takeovers and Mergers, we may in certain cases invoke a condition to the acquisition to cause the acquisition not to proceed only if the U.K. Panel on Takeovers and Mergers, is satisfied that the circumstances giving rise to that condition not being satisfied are of material significance to the company in the context of the acquisition. Because of this consent requirement, the conditions, may provide us less protection than the customary conditions in an offer for a U.S. domestic company. We therefore may be required to proceed with the acquisition in the event of a material adverse change at e2v.

We cannot predict with certainty whether and when any of the remaining required conditions will be satisfied or if another uncertainty may arise. If the proposed acquisition does not receive, or timely receive, the required regulatory approvals and clearances, or if another event occurs that delays or prevents the acquisition, such delay or failure to complete the acquisition and the acquisition process may cause uncertainty or other negative consequences that may materially and adversely affect our business, financial condition and results of operations and, to the extent that the current price of our common stock reflects an assumption that the acquisition will be completed, the price per share for our common stock could be negatively impacted.

We are subject to the risks associated with international sales and international operations, which could harm our business or results of operations.

During 2016, sales to international customers accounted for approximately 43% of our total revenues, compared with 44% in 2015 and 45% in 2014. In 2016, we sold products to customers in over 100 countries. In 2016, the top five countries for international sales were China, the United Kingdom, Germany, South Korea and Japan, constituting approximately 20% of our total sales. Our acquisitions, including CARIS in 2016, Bowtech Products Limited ("Bowtech") and ICM in 2015, Bolt in 2014, RESON in 2013, LeCroy in 2012 and DALSA in 2011, contributed to greater international sales. As noted above, our pending acquisition of e2v will add to our international presence. We anticipate that future sales to international customers will continue to account for a significant and increasing percentage of our revenues, particularly since business and growth plans for many Teledyne businesses focus on sales outside of the United States, including to emerging markets such as China, Brazil and West Africa.

Risks associated with international sales include, but are not limited to:

- political and economic instability;
- international terrorism;
- export controls, including U.S. export controls related to China, sanctions related to Russia, and increased scrutiny of exports of marine instruments, digital imaging and other products;
- changes in legal and regulatory requirements;
- U.S. and foreign government policy changes affecting the markets for our products;
- changes in tax laws and tariffs;
- changes in U.S. - China and U.S. - Russia relations;
- difficulties in protection and enforcement of intellectual property rights;
- transportation, including piracy in international waters; and
- exchange rate fluctuations.

Any of these factors could have a material adverse effect on our business, results of operations and financial condition. Exchange rate fluctuations may negatively affect the cost of our products to international customers and therefore reduce our competitive position. Given our several Canada-based businesses, volatility in the value of the Canadian dollar relative to the U.S. dollar, or other foreign currencies, could adversely affect the business, operations and the financial condition of our Digital Imaging segment.

In June 2016, the United Kingdom ("U.K.") held a referendum in which voters approved an exit from the European Union ("E.U."), commonly referred to as "Brexit." The announcement of Brexit caused significant volatility in global stock markets and currency exchange rate fluctuations that resulted in the strengthening of the U.S. dollar against foreign currencies in which we conduct business. The announcement of Brexit and the potential withdrawal of the U.K. from the E.U. may also create further global economic uncertainty, which may adversely impact the economies of the U.K., the E.U. countries and other nations, may cause our current and future customers to reduce their spending on our products and services, and may cause certain E.U.-based customers to source products from businesses based outside of the U.K. For example, Brexit-related uncertainty could lead to a reconsideration by Airbus as to future investment and spending in the U.K., which could reduce sales for our U.K.-based businesses that supply Airbus. Given our several U.K.-based businesses, including our pending acquisition of e2v, volatility in the value of the British pound relative to the U.S. dollar, or other foreign currencies, could increase the cost of raw materials and components for our U.K.-based businesses and could otherwise adversely affect the business, operations and the financial condition of our UK-based businesses.

Sales of our products and services internationally are subject to U.S. and local government regulations and procurement policies and practices including regulations relating to import-export control. Violations of export control rules could result in the impositions of fines and penalties or the suspension of our ability to export items from one or more businesses or the entire corporation. Depending on the scope of the suspension, this could have a material effect on our ability to perform certain international contracts. Attempts by the new Presidential Administration to withdraw from or materially modify international trade agreements, which were raised as a possibility in the 2016 Presidential campaign, could adversely affect our business, financial condition and results of operations.

Among other things, we are subject to the U.S. Foreign Corrupt Practices Act, or FCPA, which generally prohibits U.S. companies and their intermediaries from bribing foreign officials for the purpose of obtaining or keeping business or otherwise obtaining favorable treatment. Further, in 2011, the United Kingdom also implemented the U.K. Bribery Act, which increased the level of anti-bribery law enforcement and compliance relative to the FCPA. Any determination that we had violated the FCPA, the U.K. Bribery Act, or equivalent anti-bribery and corruption laws in countries in which we do business could result in sanctions that could have a material adverse effect on our business, financial condition and results of operations. While we have procedures and compliance programs in place and conduct FCPA and other trainings, we cannot provide assurance that our internal controls will always protect us from misconduct by our employees, agents or business partners.

Our international operations are subject to risks customarily encountered in foreign operations, including interruption to transportation flows for delivery of parts to us and finished goods to our customers, changes in a specific country's or region's political or economic conditions, trade protection measures, import or export licensing requirements, consequences from changes in tax laws and regulatory requirements, difficulty in staffing and managing widespread operations, differing labor regulations, differing protection of intellectual property and geopolitical turmoil, including terrorism and war. We are also exposed to foreign currency exchange rate risk inherent in our sales commitments, anticipated sales and expenses, and assets and liabilities denominated in currencies other than the local functional currency, and may also become subject to interest rate risk inherent in any debt we incur, or financial investments we hold.

Acquisitions involve inherent risks that may adversely affect our operating results and financial condition.

Our growth strategy includes acquisitions. Acquisitions involve various inherent risks, such as:

- our ability to assess accurately the value, strengths, weaknesses, internal controls, contingent and other liabilities and potential profitability of acquisition candidates;
- the potential loss of key personnel of an acquired business;
- our ability to integrate acquired businesses and to achieve identified financial, operating and other synergies anticipated to result from an acquisition;
- our ability to assess, integrate and implement internal controls of acquired businesses in accordance with Section 404 of the Sarbanes-Oxley Act of 2002;
- the distraction of management resulting from the need to integrate acquired businesses;
- increased competition for acquisition targets, which may increase acquisition costs;
- the potential impairment of assets;
- potential unknown liabilities associated with a business we acquire or in which we invest, including environmental liabilities;
- the risks associated with acquiring privately-held companies, which generally do not have as formal or comprehensive internal controls and compliance systems in place as public companies;
- production delays associated with consolidating acquired facilities and manufacturing operations;
- risks associated with owning and operating businesses internationally, including those arising from U.S. and foreign government policy changes or actions and exchange rate fluctuations; and
- unanticipated changes in business and economic conditions affecting an acquired business.

While we conduct financial and other due diligence in connection with our acquisitions and generally seek some form of protection, including indemnification from a seller and sometimes an escrow of a portion of the purchase price to cover potential issues, such acquired companies may have weaknesses or liabilities that are not accurately assessed or brought to our attention at the time of the acquisition. Further, indemnities or escrows may not fully cover such matters, particularly matters identified after a closing.

As they have over the last few years, acquisitions may also change the nature and level of various risks faced by Teledyne. For example, our acquisition of Bolt in 2014 increased our exposure to the offshore energy exploration market. The Bolt acquisition, the DALSA acquisition in 2011 and the LeCroy acquisition in 2012 increased the percentage of sales attributable to commercial customers as opposed to the U.S. Government. As noted above, our pending acquisition of e2v increases our international presence and the percentage of sales related to the Digital Imaging segment. These acquisitions, coupled with our other recently acquired companies, located outside of the United States, also increased the percentage of revenues and expenses that arise from international sources and consequently our exposure to U.S. and foreign policy changes and exchange rate fluctuations. Additionally, the businesses of e2v, DALSA and LeCroy are more capital intensive than other Teledyne businesses, which could result in increasing Teledyne's capital requirements.

Under SEC rules, Teledyne must issue a report on management's assessment of the effectiveness of internal controls over financial reporting. The SEC permits a limited time-based exclusion for acquisitions to give a company an opportunity to evaluate more fully the internal controls of acquired companies and correct deficiencies and institute new or additional internal controls. Our 2016 management's report specifically excludes from its scope and coverage our 2016 acquisitions of CARIS, Quantum Data, Frontline, IN USA and Hanson, allowing us additional time to evaluate existing internal controls and implement additional controls as appropriate. With regard to future acquisitions, we can provide no assurance that we will be able to provide a report that contains no significant deficiencies or material weaknesses with respect to these acquired companies or other acquisitions.

In connection with our acquisitions, including ones which we do not complete, we may incur significant transaction costs. We are required to expense, as incurred, such transaction costs, which may have a material adverse impact on our quarterly financial results. Further, the acquisitions of U.S. public companies, such as Bolt and LeCroy, now routinely trigger purported class action lawsuits, filed by shareholders of the target companies, the defense of which has increased transaction costs, among other things.

Changes in future business conditions could cause business investments, goodwill and other long-lived assets to become impaired, resulting in significant losses and write-downs that would reduce our operating income.

On January 1, 2017, Teledyne's goodwill was $1,193.5 million and net acquired intangible assets were $234.6 million. Under current accounting guidance, we are required to test annually both acquired goodwill and other indefinite-lived intangible assets for impairment based upon a fair value approach, rather than amortizing them over time. We have chosen to perform our annual impairment reviews of goodwill and other indefinite-lived intangible assets during the fourth quarter of each fiscal year. We also are required to test goodwill for impairment between annual tests if events occur or circumstances change that would more likely than not reduce our enterprise fair value below its book value. These events or circumstances could include a significant change in the business climate, including a significant sustained decline in an entity's market value, legal factors, operating performance indicators, competition, sale or disposition of a significant portion of the business, or other factors. If the fair market value is less than the carrying value, including goodwill, we could be required to record an impairment charge. The valuation of reporting units requires judgment in estimating future cash flows, discount rates and estimated product life cycles. In making these judgments, we evaluate the financial health of the business, including such factors as industry performance, changes in technology and operating cash flows. As we have grown through acquisitions, the amount of goodwill and net acquired intangible assets is a significant portion of our total assets. As a result, the amount of any annual or interim impairment could be significant and could have a material adverse effect on our reported financial results for the period in which the charge is taken. We also may be required to record an earnings charge or incur unanticipated expenses if, as a result of a change in strategy or other reason, we were to determine the value of other assets had been impaired.

United States and global responses to terrorism, continuing turmoil in Middle Eastern countries, concerns regarding nuclear proliferation and the safety of nuclear energy, potential epidemics, financial issues facing airlines and volatile energy prices increase uncertainties with respect to many of our businesses and may adversely affect our business and results of operations.

United States' and global responses to terrorism, continuing turmoil in Middle Eastern countries and nuclear proliferation concerns increase uncertainties with respect to U.S. and other business and financial markets and could adversely affect our business and operations.

Air travel declines have occurred after terrorist attacks and heightened security alerts, as well as after the high-profile outbreaks of disease. While travel by our sales and service personnel to various regions has been affected by such factors, additional declines in air travel resulting from such factors and other factors could adversely affect the financial condition of many of our commercial airline and aircraft manufacturer customers and, in turn, could adversely affect our Aerospace and Defense Electronics segment. The 2015 Paris terrorist attacks or the Syrian refugee crisis could result in governments in Europe imposing greater restrictions on the movement of personnel or goods, which could adversely impact our businesses located within the European Union or our ability to sell products in that region. In addition, a prolonged virus epidemic or pandemic, or the threat thereof, could result in worker absences, lower productivity, voluntary closure of our offices and manufacturing

facilities, disruptions in our supply chain, travel restrictions on our employees, and other disruptions to our businesses. Moreover, health epidemics may force local health and government authorities to mandate the temporary closure of our offices and manufacturing facilities.

Deterioration of financial performance of airlines could result in a reduction of discretionary spending for upgrades of avionics and in-flight communications equipment, which would adversely affect our Aerospace and Defense Electronics segment.

Higher oil prices could adversely affect commercial airline-related customers of our Aerospace and Defense Electronics segment. Conversely, lower oil prices have decreased oil exploration and petrochemical refining activities and have hindered our marine and other instrumentation businesses. In addition, instability in the Middle East or other oil-producing regions could adversely affect expansion plans of the oil and gas industry customers of our instrumentation and cable solutions businesses.

Our revenue from government contracts subjects us to many risks:

Our revenue from U.S. government contracts depends on the continued availability of funding from the U.S. Government, and, accordingly, we have the risk that funding for our existing contracts may be canceled or diverted to other uses or delayed.

We perform work on a number of contracts with the U.S. Department of Defense and other agencies and departments of the U.S. Government including sub-contracts with government prime contractors. Sales under contracts with the U.S. Government as a whole, including sales under contracts with the U.S. Department of Defense, as prime contractor or subcontractor, represented approximately 27% of our total revenue in 2016, compared with 26% in 2015 and 25% in 2014. Performance under government contracts has inherent risks that could have a material effect on our business, results of operations, and financial condition.

Government contracts are conditioned upon the continuing availability of Congressional appropriations and the failure of Congress to appropriate funds for programs in which we participate could negatively affect our results of operations. The U.S. Government shutdown during 2013 negatively affected many of our businesses, and the failure by Congress to approve future budgets on a timely basis could delay procurement of our products and services and cause us to lose future revenues. Additionally, defense spending is expected to continue to decline in some areas over the next few years. A continued emphasis on Federal deficit and debt reduction could lead to a further decrease in overall defense spending. The continued war on terrorism also could result in a diversion of funds from programs in which Teledyne participates. Budgetary concerns could result in future contracts being awarded more on price than on other competitive factors, and smaller defense budgets could result in government in-sourcing of programs and more intense competition on programs that are not in-sourced, which could result in lower revenues and profits.

The sequestration provision of the Budget Control Act of 2011 originally imposed $500.0 billion of defense cuts over nine years starting in fiscal year 2013, which represented approximately 9% of planned defense funding over the period. On November 2, 2015, the Bipartisan Budget Act of 2015 (the Budget Act) was signed into law. The Budget Act raises the statutory limit on the amount of permissible federal debt (the debt ceiling) until March 2017 and raises the sequester caps imposed by the Budget Control Act of 2011 by $80.0 billion, split equally between defense and domestic spending ($50.0 billion in government fiscal year 2016 and $30.0 billion in government fiscal year 2017). On December 18, 2015, Congress passed and the President signed the Consolidated Appropriations Act of 2016, which provides funding for the U.S. government for the government's 2016 fiscal year, providing $1.1 trillion in discretionary funding for federal agencies through September 2016. The President signed a continuing resolution in September 2016, which was extended in December 2016, and provides funding for the U.S. Government at fiscal 2016 levels through April 28, 2017. Congress has yet to pass a budget, although both chambers are moving forward with appropriations bills. The total statutory spending cap remains at $1.1 trillion as set by the relief authorized in 2016 and 2017 by the Bipartisan Budget Act of 2015 to the original sequestration specified by the Budget Act of 2011, which set discretionary caps through 2021.

Continued defense spending does not necessarily correlate to continued business for us, because not all of the programs in which we participate or have current capabilities may be provided with continued funding. Changes in policy and budget priorities by the President, his Administration and the U.S. Congress for various Defense and NASA programs could continue to impact our Engineered Systems, Aerospace and Defense Electronics and Digital Imaging segments. For example, changes in national space policy that affect NASA's budget have occurred. There have also been significant reductions in missile defense budgets. Our Engineered Systems segment may be further impacted by delays in production runs under the JASSM and Harpoon missile programs, as well as U.S. Department of Defense directives to introduce competitive bidding for programs on which we have previously served as sole source. The President has expressed concern over the cost of the F-35 Joint Strike Fighter program. Our Aerospace and Defense Electronics segment may be impacted by volume and/or price reductions in connection with this program, to the extent they are imposed. The timing of program cycles can affect our results of operations for a particular quarter or year, and cancellations of significant programs such as the Objective Simulation Framework ("OSF") or the Shallow Water Combat Submersible ("SWCS") would affect our results. It is also not uncommon for the U.S.

Department of Defense to delay the timing of awards for major programs for six to twelve months. Reductions and delays in research and development funding by the U.S. Government may continue to impact our revenues. As DARPA reviews its programs aimed to technologically enhance U.S. military capabilities and national security, changes to the DARPA research and technology development programs in which we participate could occur. Uncertainty over budgets or priorities with the new Presidential Administration could result in delays in funding, changes in funded programs and the timing of awards that could have a material impact on our revenues in 2017. Finally, various U.S. Department of Defense initiatives, such as the emphasis on in-sourcing positions to the Government and anticipated reductions or cancellations of existing programs, could negatively impact our Engineered Systems segment.

Our participation in government programs may decrease or be subject to renegotiation as those programs evolve over time.

The U.S. Government has been placing emphasis on small business quotas and increasing small business contract set asides and minimum work percentages. In some cases, prime contractors are required to reduce participation by large subcontractors like Teledyne in order to fill small business quotas and be responsive to proposals and bids. As a result, our Engineered Systems segment could be significantly impacted.

Over time, and for a variety of reasons, programs can evolve and affect the extent of our participation. We have been a significant participant in NASA programs, primarily through our Engineered Systems segment and through Teledyne Scientific Company. The prior Administration introduced significant changes to the national space policy, including the cancellation of the NASA's Constellation Program which includes Ares launch vehicles. Teledyne Brown Engineering has developed the MUSES, an Earth imaging platform, as part of our commercial space-based digital imaging business. The MUSES platform depends on continued operation of the ISS, and we may not be successful in developing the technology or commercial relationships necessary to make this investment profitable. The launch of MUSES has been delayed due to several launch failures by Space X, and is now scheduled for the summer of 2017. Continued delays in launching MUSES could have adverse impact on the success of this platform. While most recently, in early 2014, we were awarded a five-year $60.0 million contract by NASA's Marshall Space Flight Center to develop and manufacture the Launch Vehicle Stage Adapter for the Space Launch System, failure to further transition our business successfully could result in reduced sales. In addition, delayed funding and changes in support for NASA's current space policy could negatively impact our business. The new Presidential Administration could also lead to changes to the nation's space policy, some or all of which could materially impact our results.

Our contracts with the U.S. Government are subject to termination rights that could adversely affect us.

Most of our U.S. Government contracts are subject to termination by the U.S. Government either at its convenience or upon the default of the contractor. Termination for convenience provisions provide only for the recovery of costs incurred or committed, settlement expenses, and profit on work completed prior to termination. Termination for default clauses impose liability on the contractor for excess costs incurred by the U.S. Government in re-procuring undelivered items from another source. We had one U.S. Government contract terminated for convenience in 2016, compared with eight in 2015 and three in 2014. No contracts were terminated for default during such three-year period.

We may lose money or generate less than expected profits on our fixed-price and other government contracts and we may lose money if we fail to meet certain pre-specified targets in government contracts.

There is no guarantee that U.S. Government contracts will be profitable. A number of our U.S. Government prime contracts and subcontracts are fixed-price type contracts (54% of our total U.S. Government contracts were fixed-price in 2016, 54% in 2015 and 58% in 2014). Under these types of contracts, we bear the inherent risk that actual performance cost may exceed the fixed contract price. Under such contracts, we must absorb cost overruns, notwithstanding the difficulty of estimating all of the costs we will incur in performing these contracts. We cannot assure that our contract loss provisions in our financial statements will be adequate to cover all actual future losses. We may lose money or generate lower profits on some contracts if we fail to meet these estimates. We may also lose money on non-fixed price, cost-reimbursement contracts that contain dis-incentives or penalties related to cost, schedule or performance.

Our business is subject to government contracting regulations, including increasingly complex regulations on cybersecurity and our failure to comply with such laws and regulations could harm our operating results and prospects.

We, like other government contractors, are subject to various audits, reviews and investigations (including private party "whistleblower" lawsuits) relating to our compliance with federal and state laws. More routinely, the U.S. Government may audit the costs we incur on our U.S. Government contracts, including allocated indirect costs. Such audits could result in adjustments to our contract costs. Any costs found to be improperly allocated to a specific contract will not be reimbursed, and such costs already reimbursed would need to be refunded. We have recorded contract revenues based upon costs we expect to realize on final audit. In a worst case scenario, should a business or division involved be charged with wrongdoing, or should the U.S. Government determine that the business or division is not a "presently responsible contractor", that business or division, and conceivably our Company as a whole, could be temporarily suspended or, in the event of a conviction, could be debarred for up to three years from receiving new government contracts or government-approved subcontracts. In addition, we could expend substantial amounts defending against such charges and in damages, fines and penalties if such charges were proven or were to result in negotiated settlements. The Department of Defense as well as other U.S. Government contracting agencies have adopted new rules and regulations requiring contractors to implement a set of cyber security measures to attain the safeguarding of contractor systems that process, store, or transmit certain information. Implementation and compliance with these new cyber security requirements is complex and costly, and could result in unforeseen expenses, lower profitability and, in the case of non-compliance, penalties and damages, all of which could have an adverse effect on our business.

Our indebtedness, and any failure to comply with our covenants that apply to our indebtedness, could materially and adversely affect our business.

As of January 1, 2017, we had $611.7 million in total outstanding indebtedness. This indebtedness included $425.0 million in senior unsecured notes, $182.5 million in term loans and no amounts outstanding under our $750.0 million 2015-amended credit facility. As a result of our pending acquisition of e2v, we expect that our total indebtedness will initially increase by approximately $700.0 million. Our indebtedness could harm our business by, among other things, reducing the funds available to make new strategic acquisitions or reducing our flexibility in planning for or reacting to changes in our business and market conditions. Our indebtedness exposes us to interest rate risk since a portion of our debt obligations are at variable rates. Our indebtedness could also have a material adverse effect on our business by increasing our vulnerability to general adverse economic and industry conditions or a downturn in our business. General adverse economic and industry conditions or a downturn in our business could result in our inability to repay this indebtedness in a timely manner.

Our pension expense and the value of our pension assets are affected by factors outside of our control, including the performance of plan assets, the stock market, interest rates and actuarial experience.

We have a domestic qualified defined benefit pension plan covering most of our U.S. employees hired prior to 2004 or approximately 16% of our active employees. We also have several smaller domestic and foreign-based pension plans. As of January 1, 2017, the value of the combined pension assets is greater than our combined pension benefit obligations. The accounting rules applicable to our pension plans require that amounts recognized in the financial statements be determined on an actuarial basis, rather than as contributions are made to the plan. Two significant elements in determining our pension income or pension expense are the expected return on plan assets and the discount rate used in projecting pension benefit obligations. Declines in the stock market and lower rates of return could increase required contributions to our qualified pension plan and/or result in a change to shareholders' equity. Our investment strategy may not produce the expected returns if the credit, financial or stock markets deteriorate. Any decreases or increases in market interest rates will affect the discount rate assumption used in projecting pension benefit obligations. In addition, changes in other actuarial assumptions such as mortality assumptions or change due to legislative or regulatory actions could impact our pension income or expense as well as funding obligations. Each year beginning with 2014, the Society of Actuaries released revised mortality tables, which updated life expectancy assumptions. In consideration of these tables, we updated the mortality assumptions used in determining our pension and post-retirement obligations. In consideration of these tables, we modified the mortality assumptions used in determining our pension and post-retirement benefit obligations. The impact of these mortality assumptions increased our pension obligation and increased future pension expense. In 2013, we made a voluntary pretax cash contribution of $83.0 million to the domestic pension plan. No contributions were made to the domestic pension plan since the 2013 contribution. If, and to the extent, decreases in our pension assets are not offset by voluntary contributions, recovered through future asset returns, mitigated by an increase in the rate at which the benefit obligation is discounted, or other actions, our required cash contributions and pension expense could increase under the plans. For additional discussion of pension matters, see the discussion under "Item 7. Management's Discussion and Analysis of Results of Operations and Financial Condition" and Notes 2 and 11 to our Notes to Consolidated Financial Statements.

Our business and operations could suffer in the event of cyber security breaches.

Attempts by others to gain unauthorized access to our information technology systems have become more sophisticated and are sometimes successful. These attempts, which might be related to industrial or foreign government espionage, activism, or other motivations, include covertly introducing malware to our computers and networks, performing reconnaissance, impersonating authorized users, stealing, corrupting or restricting our access to data, among other activities. We continue to update our infrastructure, security tools and processes to protect against security incidents, including both external and internal threats, and to prevent their recurrence. Company personnel and third parties have been tasked to detect and investigate such incidents, but it is possible that we might not prevent or be aware of an incident or its magnitude and effects. The theft, corruption, unauthorized use or publication of our intellectual property and/or confidential business information could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives or otherwise adversely affect our business. We are subject to U.S. Department of Defense regulations applicable to certain types of data residing on or transiting through certain information systems, and we expect these regulations will be incorporated into certain contracts we hold. To the extent that any security breach results in inappropriate disclosure of confidential or controlled information of employees, third parties or the U.S. Government, we may incur liability or the loss of contracts or security clearances as a result. In addition, we expect to continue devoting additional resources to the security of our information technology systems. More resources may be required in the defense arena to the extent the U.S. Government increases its cyber security mandates.

We may not have sufficient resources to fund all future research and development and capital expenditures or possible acquisitions.

In order to remain competitive, we must make substantial investments in research and development of new or enhanced products and continuously upgrade our process technology and manufacturing capabilities. Our Teledyne Scientific Company subsidiary, which serves as our primary research center, has been actively promoting and funding joint research and development projects with other Teledyne businesses, including our Teledyne Oil & Gas businesses, Teledyne Reynolds, Inc., Teledyne Brown Engineering, Inc., DALSA and LeCroy. The business of e2v, for which the design and development of specialized technology for high performance systems and equipment is integral, will, once acquired also require substantial investments in research and development. Additionally, some of our businesses are actively pursuing governmental support and funding for some of their research and development initiatives, including DALSA with respect to its CMOS and uncooled infrared image sensor development efforts. Nonetheless, we may be unable to fund all of our research and development and capital investment needs or possible acquisitions. Our ability to raise additional capital will depend on a variety of factors, some of which will not be within our control, including the existence of bank and capital markets, investor perceptions of us, our businesses and the industries in which we operate, and general economic conditions. Failure to successfully raise needed capital or generate cash flow on a timely or cost-effective basis could have a material adverse effect on our business, results of operations and financial condition. In addition, if we fail to accurately predict future customer needs and preferences or fail to produce viable technologies, we may invest heavily in research and development of products that do not lead to significant revenue, which would adversely affect our profitability.

Limitations in customer funding for applied research and development and technology insertion projects and government support for research and development expenditures may reduce our ability to apply our ongoing investments in some market areas.

We may be unable to successfully introduce new and enhanced products in a timely and cost-effective manner or increase our participation in new markets, which could harm our profitability and prospects.

Our operating results depend in part on our ability to introduce new and enhanced products on a timely basis. In order to improve our product development capabilities we purchased the research center that is now Teledyne Scientific Company in 2006 and in 2011 we purchased DALSA, which has access to a well-equipped MEMS research and development center. In 2013, we opened a 52,000-square-foot technology development center in Daytona Beach, Florida primarily to serve the offshore oil and gas production and exploration industries. Successful product development and introduction depend on numerous factors, including our ability to anticipate customer and market requirements, changes in technology and industry standards, our ability to differentiate our offerings from offerings of our competitors, and market acceptance. We may not be able to develop and introduce new or enhanced products in a timely and cost-effective manner or to develop and introduce products that satisfy customer requirements.

Our new products also may not achieve market acceptance or correctly address new industry standards and technological changes. We may also lose any technological advantage to competitors if we fail to develop new products in a timely manner.

Additionally, new products may trigger increased warranty costs as information on such products is augmented by actual usage. Accelerated entry of new products to meet heightened market demand and competitive pressures may cause additional warranty costs as development and testing time periods might be accelerated or condensed.

We intend to both adapt our existing technologies and develop new products to expand into new market segments. We may be unsuccessful in accessing these and other new markets if our products do not meet our customers' requirements, as a result of changes in either technology and industry standards or because of actions taken by our competitors.

Technological change and evolving industry and regulatory standards could cause some of our products or services to become obsolete or non-competitive.

The markets for some of our products and services are characterized by rapid technological development, evolving industry standards, changes in customer requirements and new product introductions and enhancements. A faster than anticipated change in one or more of the technologies related to our products or services, or in market demand for products or services based on a particular technology, could result in faster than anticipated obsolescence of certain of our products or services and could lead to reduced sales of those products, which could have a material adverse effect on our business, results of operations and financial condition. Currently accepted industry and regulatory standards are also subject to change, which may contribute to the obsolescence of our products or services. The political agenda of the new Presidential Administration may affect the level of environmental regulations and enforcement and government spending on scientific research, which could adversely impact the sales of our products and services, including sales of pollution monitoring instruments and instruments used to measure the Earth's climate and climate change, such as undersea gliders and space-based imaging sensors.

We may not be able to reduce the costs of our products to satisfy customers' cost reduction mandates, which could harm our sales or margins.

More and more customers continue to seek price reductions of our products. While we continually work to reduce our manufacturing and other costs of our products, without affecting product quality and reliability, there is no assurance that we will be able to do so and do so in a timely manner to satisfy the pricing pressures of our customers. Cost reductions of raw materials and other components used in our products may be beyond our control depending on market conditions. Customers may seek lower cost products from China and other developing countries where manufacturing costs are lower.

The airline industry is heavily regulated, and if we fail to comply with applicable requirements, our results of operations could suffer.

Governmental agencies throughout the world, including the U.S. Federal Aviation Administration, or the FAA, prescribe standards and qualification requirements for aircraft components, including virtually all commercial airline and general aviation products. Specific regulations vary from country to country, although compliance with FAA requirements generally satisfies regulatory requirements in other countries. If any material authorization or approval qualifying us to supply our products is revoked or suspended, then the sale of the product would be prohibited by law, which would have an adverse effect on our business, financial condition and results of operations.

From time to time, the FAA or equivalent regulatory agencies in other countries propose new regulations or changes to existing regulations, which are usually more stringent than existing regulations. If these proposed regulations are adopted and enacted, we may incur significant additional costs to achieve compliance, which could have a material adverse effect on our business, financial condition and results of operations. Recent trends by China's aviation authority to relax restrictions on airspace may be reversed, and anticipated new regulations loosening airspace restrictions may not materialize, which could impact the future prospects of our commercial aerospace businesses. China's aviation authorities recently adopted new safety regulations for airlines that resulted in increased sales of our avionics products in China in 2016. If these regulations are reversed, the growth prospects of our commercial aerospace business in China may be limited.

Increasing competition could reduce the demand for our products and services.

Each of our markets is highly competitive. Many of our competitors have, and potential competitors could have, greater name recognition, a larger installed base of products, more extensive engineering, manufacturing, marketing and distribution capabilities and greater financial, technological and personnel resources than we do. New or existing competitors may also develop new technologies that could adversely affect the demand for our products and services. Industry acquisition and consolidation trends, particularly among aerospace and defense contractors, have adversely impacted demand for our aerospace and defense related engineering services as large prime contractors in-source increased amounts of major acquisition programs and also require significant expansion in small business participation to meet Government contracting goals. Low-cost competition from China and other developing countries could also result in decreased demand for our products. Increasing competition could reduce the volume of our sales or the prices we may charge, which would negatively impact our revenues. Smaller defense budgets both in the United States and Europe could result in additional competition for new and existing defense programs.

Product liability claims, product recalls and field service actions could have a material adverse effect on our reputation, business, results of operations and financial condition and we may have difficulty obtaining product liability and other insurance coverage.

As a manufacturer and distributor of a wide variety of products, including monitoring instruments, products used in offshore oil and gas production, products used in commercial aviation and products used in medical devices (most recently including X-ray detectors and generators), our results of operations are susceptible to adverse publicity regarding the quality or safety of our products. In part, product liability claims challenging the safety of our products may result in a decline in sales for a particular product, which could adversely affect our results of operations. This could be the case even if the claims themselves are proven untrue or settled for immaterial amounts.

While we have general liability and other insurance policies concerning product liabilities, we have self-insured retentions or deductibles under such policies with respect to a portion of these liabilities. Awarded damages could be more than our accruals. We could incur losses above the aggregate annual policy limit as well. We cannot assure that, for 2017 and in future years, insurance carriers will be willing to renew coverage or provide new coverage for product liability.

Product recalls can be expensive and tarnish our reputation and have a material adverse effect on the sales of our products. We cannot assure that we will not have additional product liability claims or that we will not recall any products.

We have been joined, among a number of defendants (often over 100), in lawsuits alleging injury or death as a result of exposure to asbestos. In addition, because of the prominent "Teledyne" name, we may continue to be mistakenly joined in lawsuits involving a company or business that was not assumed by us as part of our 1999 spin-off. To date, we have not incurred material liabilities in connection with these lawsuits. However, our historic insurance coverage, including that of its predecessors, may not fully cover such claims and the defense of such matters. Coverage typically depends on the year of purported exposure and other factors. Nonetheless, we intend to vigorously defend our position against these claims.

Certain gas generators historically manufactured by Teledyne Energy Systems, Inc. contained a sealed, wetted asbestos component. While the company has transitioned to a replacement material, had placed warning labels on its products and took care in the handling of this discontinued material by employees, there is no assurance that the company will not face product liability or workers' compensation claims involving this component.

Our Teledyne Brown Engineering, Inc.'s laboratory in Knoxville, Tennessee performs radiological analyses. Our Teledyne DALSA Professional Imaging unit develops image sensors used in medical and dental X-ray applications along with portable X-ray generators used in non-destructive testing and security applications. In addition, our Teledyne DALSA Digital Imaging unit develops equipment and sensors used in eye examination and general surgical vision applications. Errors and omissions in analyses may occur or erroneous images could be captured. Our insurance coverage or indemnities may not be adequate to cover potential problems associated with faulty radiological analyses.

Teledyne Brown Engineering, Inc. and other Teledyne companies manufacture components for customers in the nuclear power market, including utilities and certain governmental entities. Certain liabilities associated with such products are covered by the Price-Anderson Nuclear Industries Indemnity Act and other statutory and common law defenses, and we have received indemnities from some of our customers. However, there is no assurance we will not face product liability claims related to such products or that our exposure will not exceed the amounts for which we have liability coverage or protection.

Our business and financial results could be adversely affected by conditions and other factors associated with our suppliers.

Some items we purchase for the manufacture of our products are purchased from limited or single sources of supply due to technical capability, price and other factors. For example, DALSA has a single source of supply for CCD semiconductor wafers used to assemble image sensors and an external single source of supply for CMOS semiconductor wafers used to assemble X-ray panel products. LeCroy continues to outsource a portion of its research and development activities to a third party engineering firm in Malaysia where it may be more difficult for us to enforce our intellectual property rights. We have also outsourced from time to time the manufacturing of certain parts, components, subsystems and even finished products to single or limited sources, including international sources. Disruption of these sources could cause delays or reductions in shipments of our products or increases in our costs, which could have an adverse effect on our financial condition or operations. International sources possess additional risks, some of which are similar to those described above in regard to international sales. With any continuing disruption in the global economy and financial markets, some of our suppliers may also continue to face issues gaining access to sufficient credit and materials to maintain their businesses, which could reduce the availability of some components and, to the extent such suppliers are single source suppliers, could adversely affect our ability to continue to manufacture and sell our products. Continuing economic pressure on suppliers may also trigger increased pricing or workforce reductions or reduced workweeks and a shrinking supply base, possibly creating longer lead times to obtain needed components for our products, delays in material acceptance and a greater risk of receiving counterfeit parts.

Some of our commercial product lines may have one or a limited number of customers, the loss of which could adversely affect our business or financial results.

While no commercial customer accounted for more than 10% of our total sales during 2016, 2015 and 2014 and we have hundreds of customers in the various industries that we serve, some of our product lines may have one or a few key customers the loss of which could adversely affect our business or financial results. In 2016, no commercial customer accounted for more than 2.0% of total sales. Teledyne's largest commercial customer in 2015 and 2014, a customer of our Instrumentation segment, accounted for 2.3% and 2.8% of total sales in 2015 and 2014, respectively.

Newer products, such as our X-ray generators and X-ray panel products, may initially be more heavily dependent on a singular or limited number of customers until market acceptance is obtained or due to contractual terms. Similarly, some older product lines may be more heavily dependent on a singular or limited number of customers. In either such case, program delays of such customer or customers, as well as the loss of such customer or customers, could adversely affect our business or financial results.

We face risks related to sales through distributors and other third parties that we do not control, which could harm our business.

We sell a portion of our products through third parties such as distributors, value-added resellers and OEMs (collectively "distributors"). Using third parties for distribution exposes Teledyne to many risks, including concentration, credit risk and compliance risks. We may rely on one or more key distributors for a product, and the loss of these distributors could reduce our revenue. Distributors may face financial difficulties, including bankruptcy, which could harm our collection of accounts receivables and financial results. Violations of the FCPA or similar anti-bribery laws by distributors or other third party intermediaries could have a material impact on our business. Failing to manage risks related to our use of distributors may reduce sales, increase expenses, and weaken our competitive position, and could result in sanctions against us.

Compliance with increasing environmental and climate change regulations, as well as the effects of potential environmental liabilities, could have a material adverse financial effect on us.

We, like other industry participants, are subject to various federal, state, local and international environmental laws and regulations. We may be subject to increasingly stringent environmental standards in the future, particularly as greenhouse gas emissions and climate change regulations and initiatives increase. Future developments, administrative actions or liabilities relating to environmental and climate change matters could have a material adverse effect on our business, results of operations or financial condition. Environmental regulations on hydraulic fracturing and the use of seismic energy sources for offshore energy exploration could adversely affect some product lines of our Instrumentation segment.

Our manufacturing operations, including former operations, could expose us to material environmental liabilities. Additionally, companies we acquire may have environmental liabilities that are not accurately assessed or brought to our attention at the time of the acquisition.

The U.S. Environmental Protection Agency ("EPA") has focused on greenhouse gases ("GHGs"), maintaining GHGs threaten the public health and welfare of the American people. The EPA also maintains that GHG emissions from on-road vehicles contribute to that threat. The EPA's endangerment finding covers emissions of six greenhouse gases. The EPA's continuing efforts to limit GHG emissions could adversely affect our U.S. manufacturing operations, increase prices for energy, fuel and transportation, require us to accommodate changes in parameters, such as the way parts are manufactured, and may, in some cases, require us to redesign certain of our products. This could lead to increased costs, which we may not be able to recover from customers, delays in product shipments and loss of market share to competitors.

For additional discussion of environmental matters, see the discussion under the caption "Other Matters - Environmental" of "Item 7. Management's Discussion and Analysis of Results of Operation and Financial Condition" and Note 14 to our Notes to Consolidated Financial Statements.

Our inability to attract and retain key personnel could have a material adverse effect on our future success.

Our future success depends to a significant extent upon the continued service of our executive officers and other key management and technical personnel and on our ability to continue to attract, retain and motivate qualified personnel. We also have a maturing workforce. While we have engaged in succession planning, the loss of the services of one or more of our key employees or our failure to attract, retain and motivate qualified personnel could have a material adverse effect on our business, financial condition and results of operations.

We may not be able to sell, exit or reconfigure businesses, facilities or product lines that we determine no longer meet with our growth strategy or that should be consolidated.

Consistent with our strategy to emphasize growth in our core markets, we continually evaluate our businesses to ensure that they are aligned with our strategy. This review led to the decision to sell the net assets of the Printed Circuit Technology ("PCT") business in 2016 and the general aviation piston engine businesses in 2011. As a result of our review and declines in our electronic manufacturing services businesses, in 2013, we closed our Teledyne Microelectronics Technologies' facility in Marina del Rey, California and relocated several of its product lines to other Teledyne locations. In further response to downturns in our defense businesses, in 2013, we also began consolidating some of our microelectronic component operations into our Mountain View, California facility and also our Shipley, England facility, and relatedly sold a former manufacturing site in Sunnyvale, California. Additionally, we closed Teledyne CML Group Limited's precision machining and fabrications business in Birkenhead, England to focus more on its advanced composites manufacturing business.

In 2015, we began to consolidate some of the businesses units and facilities in our Instrumentation segment, and it continued into 2016. We may not be able to realize efficiencies and cost savings from these consolidation activities. There is no assurance that our efforts will be successful. If we do not successfully manage our current consolidation activities, or any other similar activities that we may undertake in the future, expected efficiencies and benefits might be delayed or not realized, and our operations and business could be disrupted. Our ability to dispose of, exit or reconfigure businesses that may no longer be aligned with our growth strategy will depend on many factors, including the terms and conditions of any asset purchase and sale agreement, as well as industry, business and economic conditions. We cannot provide any assurance that we will be able to sell non-strategic businesses on terms that are acceptable to us, or at all. In addition, if the sale of any non-strategic business cannot be consummated or is not practical, alternative courses of action, including relocation of product lines or closure, may not be available to us or may be more costly than anticipated.

Natural and man-made disasters could adversely affect our business, results of operations and financial condition.

Several of our facilities, as a result of their locations, could be subject to a catastrophic loss caused by earthquakes, hurricanes, tornados, floods, ice storms or other natural disasters. Many of our production facilities and our headquarters are located in California and thus are in areas with above average seismic activity and may also be at risk of damage in wildfires. Teledyne DALSA's semiconductor facilities in Quebec, Canada have been impacted by severe ice storms, including a storm in 2013. In addition, we have manufacturing facilities in the Southeastern United States and Texas that have been threatened and struck by major hurricanes. In October 2012, LeCroy and other Teledyne facilities incurred business interruptions and were without power for several days as a result of Hurricane Sandy. Our facilities in Alabama, Florida, Nebraska, Tennessee and Virginia have also been threatened by tornados. In June 2012, a tornado caused substantial damage to and interrupted business at our Teledyne Hastings Instruments facility in Hampton, Virginia. In April 2011, tornados caused substantial damage in Huntsville, Alabama. While Teledyne Brown Engineering's main facility in Huntsville, Alabama incurred minimal building damage and business interruption, the facility was without power for several days. If any of our California facilities, including our California headquarters, were to experience a catastrophic earthquake or wildfire loss or if any of our Alabama, Florida, Louisiana, Nebraska, Tennessee or Texas facilities were to experience a catastrophic hurricane, storm, tornado or other natural disaster, or if DALSA's facilities in Quebec experience long-term loss of electrical power, such event could disrupt our operations, delay production, shipments and revenue, and result in large expenses to repair or replace the facility or facilities. While Teledyne has property insurance to partially reimburse it for losses caused by windstorm and earth movement, such insurance would not cover all possible losses. In addition, our existing disaster recovery and business continuity plans (including those relating to our information technology systems) may not be fully responsive to, or minimize losses associated with, catastrophic events.

The environmental disaster triggered by the Deepwater Horizon rig explosion and oil spill in 2010 resulted in a moratorium on offshore oil and gas production in the Gulf of Mexico that adversely affected the results of operations of some of our Teledyne oil and gas businesses, although such adverse impact was offset, in part, by the products we manufacture that supported well-capping and environmental clean-up efforts. Environmental regulations enacted in the wake of this oil spill have resulted in increased compliance costs to some of our Teledyne oil and gas businesses. Similar future man-made disasters that limit or cease offshore oil and gas production or further exploration in the regions in which we sell our products could have a material adverse effect on our business, results of operations and financial condition.

Disasters that do not directly impact us can have an indirect adverse impact on our business. For example, in 2011 the earthquake in northern Japan and the related tsunami and severe flooding in Thailand resulted in certain of our customers delaying orders for our products because they were unable to obtain critical supplies from vendors in the impacted areas.

Teledyne Brown Engineering, Inc. is building an imaging platform to be affixed to the ISS. For the program to be financially successful, the 18 year-old ISS must continue to fly in a safe and human tended condition. While certain spaceflight risks, such as a high-velocity debris impact to the station causing significant structural damage or necessitating the evacuation of the ISS, have been regarded as small, if such event were to occur, the ISS program continuation could be threatened, jeopardizing our investment and potential revenue generation from ISS-based Earth imaging.

We may not be able to enforce or protect our intellectual property rights, or third parties may claim infringement of their intellectual rights, each which may harm our ability to compete and thus harm our business.

Our ability to enforce and protect our patents, copyrights, software licenses, trade secrets, know-how, and other intellectual property rights is subject to general litigation risks, as well as uncertainty as to the enforceability of our intellectual property rights in various countries. When we seek to enforce our rights, we have found that various claims may be asserted against us, including claims that our intellectual property right is invalid, is otherwise not enforceable or is licensed to the party against whom we are asserting a claim. In addition, we may be the target of aggressive and opportunistic enforcement of patents by third parties. If we are not ultimately successful in defending ourselves against these claims in litigation, we may not be able to sell a particular product or family of products due to an injunction, or we may have to pay damages that could, in turn, harm our results of operations. Our inability to enforce our intellectual property rights under these circumstances may harm our competitive position and our business.

Higher tax rates may harm our results of operations and cash flow.

Our effective tax rate for 2016 was 20.9%, compared with 24.3% for 2015 and 23.6% for 2014. While the new Presidential Administration has commented about lowering the corporate tax rate in the United States to improve global competitiveness, a number of factors may impact our effective tax rates, which could reduce our net income and increase our tax payments, including:

- the relative amount of income we earn in jurisdictions;
- changes in tax laws or their interpretation, including changes in the United States to the taxation of foreign income and expenses, changes in tax laws in foreign jurisdictions, and changes in U.S. generally accepted accounting principles and governing body pronouncements and interpretations;
- the resolution of issues arising from tax audits;
- changes in valuation of our deferred tax assets and liabilities, including deferred tax valuation allowances;
- adjustments to income taxes upon finalization of tax returns;
- increases in expense not deductible for tax purposes;
- changes in available tax credits; and
- any decision to repatriate non-U.S. earnings for which we have not previously provided for U.S. taxes.

Our inability to efficiently implement changes to our enterprise resource planning software could result in higher than expected costs or otherwise adversely impact our internal controls environment, operations and profitability.

We are implementing enterprise resource planning software systems, which are intended to improve our business processes in certain business units. The costs associated with such systems can be significant and we could incur costs in excess of budgeted costs. Any technical or other difficulties in developing or implementing this initiative may increase the costs of the project and have an adverse effect on our operations and reporting processes, including our internal controls over financial reporting. As we make adjustments to operations as a result of this project, we may incur incremental expenses prior to realizing the benefits of a more efficient workforce and operating structure. Although implementation has occurred in only selected business units to date and efforts have been made to minimize adverse impacts on our controls, we cannot assure that all such impacts have been mitigated. Further, we may not realize anticipated cost improvements and greater efficiencies from the project.

Our financial statements are based on estimates required by Generally Accepted Accounting Principles in the United States ("GAAP"), and actual results may differ materially from those estimated under different assumptions or conditions.

Our financial statements are prepared in conformity with GAAP. These principles require our management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. For example, estimates are used when accounting for items such as asset valuations, allowances for doubtful accounts, allowance for excess and obsolete inventory, depreciation and amortization, impairment assessments, employee benefits, taxes, recall and warranty costs, product and general liability and contingencies. While we base our estimates on historical experience and on various assumptions that we believe to be reasonable under the circumstances at the time made, actual results may differ materially from those estimated. Our most critical accounting estimates are described in the Management Discussion in this Form 10-K under "Critical Accounting Estimates."

While we believe our internal control systems are effective, there are inherent limitations in all control systems, and misstatements resulting from error or fraud may occur and may not be detected.

We continue to take action to assure compliance with the internal controls, disclosure controls and other requirements of the Sarbanes-Oxley Act of 2002. Our management, including our Chief Executive Officer and Chief Financial Officer, cannot guarantee that our internal controls and disclosure controls will prevent all possible errors or all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. In addition, the design of a control system must reflect the fact that there are resource constraints and the benefit of controls must be relative to their costs. Because of the inherent limitations in all control systems, no system of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Further, controls can be circumvented by individual acts of some persons, by collusion of two or more persons, or by management override of the controls. The design of any system of controls is also based, in part, upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, a control may be inadequate because of changes in conditions or the degree of compliance with the policies or procedures may deteriorate. Because of inherent limitations in a cost-effective control system, misstatements resulting from error or fraud may occur and may not be detected.

Provisions of our governing documents, applicable law, and our Change in Control Severance Agreements could make an acquisition of Teledyne more difficult.

Our Restated Certificate of Incorporation, our Amended and Restated Bylaws and the General Corporation Law of the State of Delaware contain several provisions that could make the acquisition of control of Teledyne, in a transaction not approved by our Board of Directors, more difficult. We have also entered into Change in Control Severance Agreements with thirteen members of our current management, which could have an anti-takeover effect. These provisions may prevent or discourage attempts to acquire our company.

The market price of our Common Stock has fluctuated significantly since we became a public company, and could continue to do so.

Since we became an independent public company on November 29, 1999, the market price of our Common Stock has fluctuated substantially and fluctuations in our stock price could continue. In fiscal 2015, our stock price declined 15% and in fiscal 2016, our stock increased 38.6%. Among the factors that could affect our stock price are:

- quarterly variations in our operating results;
- strategic actions by us or our competitors;
- acquisitions;
- divestitures;
- stock repurchases;
- adverse business developments;
- war in the Middle East or elsewhere;
- terrorists activities;
- military or homeland defense activities;
- changes to the U.S. Federal budget;
- changes in the energy exploration or production, semiconductor, digital imaging, telecommunications, commercial aviation, and electronic manufacturing services markets;
- general market conditions;
- changes in tax laws;
- general economic factors unrelated to our performance;
- changes from analysts' expectations in revenues, earnings or other financial results; and
- one or more of the risk factors described in this report.

The stock markets in general, and the markets for high-technology companies in particular, have experienced a high degree of volatility that is not necessarily related to the operating performance of these companies. We cannot provide assurances as to our stock price. We have in the past repurchased shares of our stock pursuant to board-approved stock repurchase programs. We cannot provide assurances that we will continue to repurchase shares under those programs, or that our board will authorize new repurchase programs.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The Company has 61 principal operating facilities in 16 states and five foreign countries. The Company's executive offices are located in Thousand Oaks, California. Its principal research and development center is also located in Thousand Oaks, California. Our maintain our facilities in good operating condition and we believe they are suitable and adequate for the purposes for which they are intended and overall have sufficient capacity to conduct business as currently conducted.

Information on the number, ownership and location of principal operating facilities by segment was as follows at February 28, 2017:

Principal operating facilities by segment:			Location of Facilities	
Segment	Owned	Leased	States	Countries
Instrumentation	13	12	California, Colorado, Florida, Massachusetts, Nebraska, New Hampshire, New York, Ohio, Texas and Virginia	United States, Canada, Denmark and United Kingdom
Digital Imaging	8	4	California, Massachusetts, North Carolina and Pennsylvania	United States, Belgium, Canada and The Netherlands
Aerospace and Defense Electronics	7	12	California, Illinois, New Hampshire, Pennsylvania, Tennessee and Texas	United States and United Kingdom
Engineered Systems	1	4	Alabama, Colorado, Maryland, Ohio and Tennessee	United States and United Kingdom
Total	29	32		

Item 3. Legal Proceedings

From time to time, we become involved in various lawsuits, claims and proceedings arising out of, or incident to, our ordinary course of business including lawsuits, claims or proceedings pertaining to product liability, patent infringement, commercial contracts, employment and employee benefits. While we cannot predict the outcome of any lawsuit, claim or proceeding, our management does not believe that the disposition of any pending matters is likely to have a material adverse effect on our business, financial condition or liquidity.

Item 4. Mine Safety Disclosures

No information is required in response to this item.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

Price Range of Common Stock and Dividend Policy

Our Common Stock is listed on the New York Stock Exchange and traded under the symbol "TDY". The following table sets forth, for the periods indicated, the high and low sale prices for the Common Stock as reported by the New York Stock Exchange.

High and low stock price:	High	Low
2015		
1st Quarter	$ 105.77	$ 93.19
2nd Quarter	$ 110.08	$100.29
3rd Quarter	$ 111.81	$ 91.13
4th Quarter	$ 94.35	$ 83.08
2016		
1st Quarter	$ 90.85	$ 73.66
2nd Quarter	$ 101.66	$ 85.29
3rd Quarter	$ 110.61	$ 94.68
4th Quarter	$ 129.36	$101.90
2017		
1st Quarter (through February 28, 2017)	$ 134.79	$119.67

On February 28, 2017, the closing sale price of our Common Stock as reported by the New York Stock Exchange was $131.41 per share. As of February 28, 2017, there were 3,574 holders of record of the Common Stock. Because many of our shares of common stock are held by brokers and institutions on behalf of stockholders, we are unable to estimate the total number of beneficial owners of our stock represented by these stockholders of record.

We intend to use future earnings to fund the development and growth of our businesses, including through potential acquisitions. We may also deploy cash to fund share repurchases. Therefore, we do not anticipate paying any cash dividends in the foreseeable future.

In January 2015, our Board of Directors authorized a stock repurchase program to repurchase 2,500,000 shares of our common stock. In January 2016, our Board of Directors authorized a stock repurchase program to repurchase 3,000,000 shares of our common stock. See Note 8 to our Consolidated Financial Statements for additional information about our stock repurchase program.

Information relating to compensation plans under which our equity securities are outstanding for issuance is set forth in Part III, Item 12 of this Annual Report on Form 10-K.

Item 6. Selected Financial Data

The following table presents our summary consolidated financial data. We derived the following historical selected financial data from our audited consolidated financial statements. Our fiscal year is determined based on a 52- or 53-week convention ending on the Sunday nearest to December 31. Each fiscal year presented below contained 52 weeks except for fiscal year 2015 which contained 53 weeks. The five-year summary of selected financial data should be read in conjunction with the discussion under "Item 7-Management's Discussion and Analysis of Financial Condition and Results of Operation" and the Notes to the Consolidated Financial Statements. The Company's Form 10-Qs for the second and third quarters of 2016 classified our Printed Circuit Technology ("PCT") business, which was sold in July 2016, as discontinued operations. Based on further review we have determined that the sale and impact to the Company's operations were insignificant and therefore the results of PCT are no longer presented within discontinued operations.

Five-Year Summary of Selected Financial Data

	2016	2015	2014	2013	2012
	(In millions, except per-share amounts)				
Sales	**$ 2,149.9**	$ 2,298.1	$ 2,394.0	$ 2,338.6	$ 2,127.3
Net income from continuing operations	**$ 190.9**	$ 195.8	$ 217.7	$ 185.0	$ 161.8
Net income from discontinued operations	**$ —**	$ —	$ —	$ —	$ 2.3
Net income attributable to Teledyne	**$ 190.9**	$ 195.8	$ 217.7	$ 185.0	$ 164.1
Basic earnings per common share - continuing operations	**$ 5.52**	$ 5.55	$ 5.87	$ 4.96	$ 4.41
Diluted earnings per common share - continuing operations	**$ 5.37**	$ 5.44	$ 5.75	$ 4.87	$ 4.33
Basic earnings per common share	**$ 5.52**	$ 5.55	$ 5.87	$ 4.96	$ 4.47
Diluted earnings per common share	**$ 5.37**	$ 5.44	$ 5.75	$ 4.87	$ 4.39
Weighted average diluted common shares outstanding	**35.5**	36.0	37.9	38.0	37.4
Total assets	**$ 2,774.4**	$ 2,717.1	$ 2,862.2	$ 2,751.1	$ 2,406.4
Long-term debt and capital lease obligations, net of current portion	**$ 515.8**	$ 761.5	$ 618.9	$ 549.0	$ 556.2
Total equity	**$ 1,554.4**	$ 1,344.1	$ 1,468.5	$ 1,518.7	$ 1,203.4

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Teledyne Technologies Incorporated provides enabling technologies for industrial growth markets. We have evolved from a company that was primarily focused on aerospace and defense to one that serves multiple markets that require advanced technology and high reliability. These markets include deepwater oil and gas exploration and production, oceanographic research, air and water quality environmental monitoring, factory automation and medical imaging. Our products include monitoring instrumentation for marine and environmental applications, harsh environment interconnects, electronic test and measurement equipment, digital imaging sensors and cameras, aircraft information management systems, and defense electronics and satellite communication subsystems. We also supply engineered systems for defense, space, environmental and energy applications. We differentiate ourselves from many of our direct competitors by having a customer and company sponsored applied research center that augments our product development expertise.

Strategy/Overview

Our strategy continues to emphasize growth in our core markets of instrumentation, digital imaging, aerospace and defense electronics and engineered systems. Our core markets are characterized by high barriers to entry and include specialized products and services not likely to be commoditized. We intend to strengthen and expand our core businesses with targeted acquisitions and through product development. We continue to focus on balanced and disciplined capital deployment among capital expenditures, acquisitions and share repurchases. We aggressively pursue operational excellence to continually improve our margins and earnings. At Teledyne, operational excellence includes the rapid integration of the businesses we acquire. Using complementary technology across our businesses and internal research and development, we seek to create new products to grow our company and expand our addressable markets. We continue to evaluate our businesses to ensure that they are aligned with our strategy.

Consistent with this strategy, we made five acquisitions in 2016, three acquisitions in 2015 and four acquisitions in 2014. On December 6, 2016, Teledyne Instruments, Inc. acquired Hanson Research Corporation ("Hanson Research") which specializes in analytical instrumentation for the pharmaceutical industry. On November 2, 2016, Teledyne Instruments, Inc. acquired assets of IN USA, Inc. ("IN USA"), a manufacturer of a range of ozone generators, ozone analyzers and other gas monitoring instruments utilizing ultraviolet and infrared based technologies. On May 3, 2016, Teledyne DALSA, Inc., a Canadian-based subsidiary, acquired the assets and business of CARIS, Inc. ("CARIS") a leading developer of geospatial software designed for the hydrographic and marine community. On April 15, 2016, Teledyne LeCroy, Inc., a U.S.-based subsidiary, acquired assets of Quantum Data, Inc. ("Quantum Data") a market leader in video protocol analysis test tools. On April 6, 2016, Teledyne LeCroy, Inc. also acquired Frontline Test Equipment, Inc. ("Frontline") a market leader in wireless protocol analysis test tools.

On June 5, 2015, Teledyne DALSA B.V., a Netherlands-based subsidiary, acquired Industrial Control Machines SA ("ICM") a leading supplier of portable X-ray generators for non-destructive testing applications, as well as complete X-ray imaging systems for on-site security screening. On April 29, 2015, Teledyne DALSA, Inc. acquired the remaining 49% noncontrolling interest in the parent company of Optech Incorporated ("Optech"). On February 2, 2015, Teledyne acquired Bowtech Products Limited ("Bowtech") through a U.K.-based subsidiary. Bowtech designs and manufactures harsh underwater environment vision systems. In 2015, Teledyne made an additional investment in Ocean Aero, Inc. ("Ocean Aero") and we acquired a product line.

On December 12, 2016, Teledyne and e2v technologies plc ("e2v") reached agreement on the terms of a recommended cash acquisition to be made by Teledyne for the ordinary share capital of e2v by means of a Scheme of Arrangement (the "Offer"). Under the terms of the Offer, e2v's ordinary shareholders ("e2v Shareholders") will receive 275 pence in cash for each e2v share valuing the entire issued and to be issued ordinary share capital of e2v at approximately £619.6 million on a fully diluted basis. It is expected that, subject to the satisfaction or waiver of all relevant conditions, the acquisition will be completed in the first half of calendar 2017. At meetings held in January 2017, e2v shareholders voted in favor of the resolution to approve the scheme of arrangement and voted to pass a special resolution to approve the implementation of the scheme. The waiting periods required under both the U.S. Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and in respect of the e2v's U.S. State Department's ITAR registration have expired. Clearance or expiration of the waiting period under German merger control laws remains outstanding. After discussions with the German authorities, e2v and Teledyne submitted a revised application for clearance on February 24, 2017 in respect of the acquisition. The German authorities have one month to review such revised submission. Clearance from the French Ministry of Economy and Finance and the French Ministry of Defense in respect of the acquisition also remains outstanding. Teledyne expects to fund the acquisition from cash on hand and its credit facility, as well as the anticipated proceeds from the issuance of senior unsecured notes and term loans.

For the machine vision market, e2v provides high performance image sensors and custom camera solutions and application specific standard products. In addition, e2v provides high performance space qualified imaging sensors and arrays for space science and astronomy. e2v also produces components and subsystems that deliver high reliability radio frequency power generation for healthcare, industrial and defense applications. Finally, the company provides high reliability semiconductors and board-level solutions for use in aerospace, space and radio frequency communications applications. At announcement, the aggregate enterprise value for the transaction is expected to be approximately £627.1 million (or approximately $788.9 million) taking into account e2v stock options and net debt. For its fiscal year ended March 31, 2016, e2v had sales of approximately £236.4 million.

In connection with our strategy, in the third quarter of 2016, Teledyne completed the disposition of the net assets of its Printed Circuit Technology ("PCT") business for $9.3 million in cash, resulting in no gain or loss. PCT was part of the Aerospace and Defense Electronics segment. In connection with the sale, we entered into a transition services agreement, effective July 8, 2016, to provide certain administrative services to facilitate the orderly transfer of the business operations to the buyer, with the transition services agreement expected to continue through the first half of 2017. In addition, in 2016 we sold a former operating facility in California and recorded a pretax gain of $17.9 million, and incurred pretax charges totaling $7.9 million related to the pending e2v acquisition.

As part of a continuing effort to reduce costs and improve operating performance, we took actions to consolidate and relocate certain facilities and reduce headcount across various businesses, reducing our exposure to weak end markets and high cost locations. We continue to seek cost reductions in our businesses. The following pre-tax charges were incurred related to severance and facility consolidations (in millions):

	2016	2015	2014
Instrumentation	**$ 10.6**	$ 3.9	$ 1.0
Digital Imaging	**2.0**	3.2	2.7
Aerospace and Defense Electronics	**4.6**	1.2	0.9
Engineered Systems	**0.1**	0.1	(0.2)
Total	**$ 17.3**	$ 8.4	$ 4.4

	2016	2015	2014
Severance	**$ 9.5**	$ 8.4	$ 4.2
Facility consolidations	**7.8**	—	0.2
Total	**$ 17.3**	$ 8.4	$ 4.4

	2016	2015	2014
Cost of sales	**$ 6.8**	$ 3.7	$ 1.0
Selling, general and administrative expenses	**10.5**	4.7	3.4
Total	**$ 17.3**	$ 8.4	$ 4.4

At January 1, 2017, $3.7 million remains to be paid related to these actions.

Recent Acquisitions

The Company spent $93.4 million, $66.7 million and $195.8 million on acquisitions and investments in 2016, 2015 and 2014, respectively.

On November 2, 2016, Teledyne Instruments, Inc. acquired assets of IN USA, headquartered in Norwood, Massachusetts, for $10.2 million in cash. Teledyne intends to relocate and consolidate manufacturing into the new, owned facility of Teledyne Advanced Pollution Instrumentation in San Diego, California. On December 6, 2016, Teledyne Instruments, Inc. acquired Hanson Research, headquartered in Chatsworth, California, for $25.0 million, net of cash acquired. On May 3, 2016, Teledyne DALSA, Inc., a Canadian-based subsidiary, acquired the assets and business of CARIS, based in Fredericton, New Brunswick, Canada, for $26.2 million, net of cash acquired. On April 15, 2016, Teledyne LeCroy, Inc., a U.S.-based subsidiary, acquired assets of Quantum Data, based in Elgin, Illinois, for $17.3 million in cash. On April 6, 2016, Teledyne LeCroy, Inc. also acquired Frontline, based in Charlottesville, Virginia, for $13.7 million in cash.

Each of the 2016 acquisitions are part of the Instrumentation segment except for CARIS which is part of the Digital Imaging segment.

On June 5, 2015, Teledyne DALSA B.V., a Netherlands-based subsidiary, acquired Industrial Control Machines SA ("ICM") for $21.8 million, net of cash acquired. In December 2016, an additional $2.5 million was paid by Teledyne related to an indemnification holdback. Based in Liège, Belgium, ICM is a leading supplier of portable X-ray generators for non-destructive testing applications, as well as complete X-ray imaging systems for on-site security screening and is part of the Digital Imaging segment.

As a result of the purchase of the remaining interest in Optech in 2015, the difference between the cash paid and the balance of noncontrolling interest was recorded to additional paid-in capital. The balance of the noncontrolling interest of $41.2 million at December 28, 2014 decreased by $0.3 million for the net loss and $1.3 million in translation adjustments prior to the purchase which eliminated the remaining balance. The balance of the noncontrolling interest of $47.0 million at December 29, 2013 decreased by $2.1 million for the net loss and $3.7 million in translation adjustments, resulting in a balance of $41.2 million at December 28, 2014. Teledyne no longer has any noncontrolling interests.

On February 2, 2015, Teledyne acquired Bowtech Products Limited ("Bowtech") through a U.K.-based subsidiary for $18.9 million in cash, net of cash acquired and including an estimated working capital adjustment. Based in Aberdeen, Scotland, Bowtech designs and manufactures harsh underwater environment vision systems and is part of the Instrumentation segment.

The 2014 acquisitions included, Bolt Technology Corporation ("Bolt") which expanded our capabilities related to offshore oil and natural gas exploration, as well as increased our offerings of remotely operated robotic vehicles systems. We acquired the assets of The Oceanscience Group Ltd. ("Oceanscience") to enhance our capabilities related to marine sensor platforms and unmanned surface vehicles. We also acquired assets of Atlas Hydrographic GmbH ("Atlas") to add marine sonar systems for mid and deep water applications and we acquired Photon Machines, Inc. ("Photon") to supplement our offerings of laser-based sample introduction equipment for laboratory instrumentation. In addition, in 2014 we made an initial investment in Ocean Aero, Inc.

Teledyne funded the purchases from borrowings under its credit facility and cash on hand. The CARIS, ICM, Bowtech and Optech acquisitions were funded with cash held by foreign subsidiaries. The results of the acquisitions have been included in Teledyne's results since the dates of the respective acquisition.

On November 18, 2014, Teledyne acquired all of the outstanding common shares of Bolt for $22.00 per share payable in cash. The aggregate value for the transaction was $171.0 million, excluding transaction costs and taking into account Bolt's stock options, other liabilities and net cash on hand. Bolt is a developer and manufacturer of marine seismic data acquisition equipment used for offshore oil and natural gas exploration. Bolt is also a developer and manufacturer of remotely operated robotic vehicles systems used for a variety of underwater tasks. Bolt had sales of $67.5 million for its fiscal year ended June 30, 2014.

On October 22, 2014, a subsidiary of Teledyne acquired the assets of Oceanscience for $14.7 million, net of cash acquired. On August 18, 2014, a subsidiary of Teledyne acquired assets of Atlas for $5.2 million. On March 31, 2014, a subsidiary of Teledyne acquired Photon Machines, Inc. ("Photon") for an initial payment of $3.3 million.

All of the 2014 acquisitions are part of the Instrumentation segment.

See Note 3 to our Consolidated Financial Statements for additional information about our recent acquisitions.

Consolidated Operating Results

Our fiscal year is determined based on a 52- or 53-week convention ending on the Sunday nearest to December 31. Fiscal year 2016 contained 52 weeks, fiscal year 2015 contained 53 weeks and fiscal year 2014 contained 52 weeks. The following are selected financial highlights for 2016, 2015 and 2014 (in millions, except per-share amounts):

	2016	2015	2014
Sales	**$ 2,149.9**	$ 2,298.1	$ 2,394.0
Costs and Expenses			
Cost of sales	**1,318.0**	1,427.8	1,487.1
Selling, general and administrative expenses	**578.1**	588.6	612.4
Total costs and expenses	**1,896.1**	2,016.4	2,099.5
Operating Income	**253.8**	281.7	294.5
Interest and debt expense, net	**(23.2)**	(23.9)	(19.0)
Other income, net	**10.7**	0.4	6.6
Income before income taxes	**241.3**	258.2	282.1
Provision for income taxes	**50.4**	62.7	66.5
Net income	**190.9**	195.5	215.6
Noncontrolling interest	**—**	0.3	2.1
Net income attributable to Teledyne	**$ 190.9**	$ 195.8	$ 217.7
Basic earnings per common share	**$ 5.52**	$ 5.55	$ 5.87
Diluted earnings per common share	**$ 5.37**	$ 5.44	$ 5.75

Our businesses are aligned in four business segments: Instrumentation, Digital Imaging, Aerospace and Defense Electronics and Engineered Systems. Our four business segments and their respective percentage contributions to our total sales in 2016, 2015 and 2014 are summarized in the following table:

	Percentage of Total Sales		
Segment contribution to total sales:	**2016**	**2015**	**2014**
Instrumentation	**41%**	46%	47%
Digital Imaging	**18%**	16%	17%
Aerospace and Defense Electronics	**29%**	26%	25%
Engineered Systems	**12%**	12%	11%
	100%	100%	100%

Results of Operations

2016 compared with 2015

Sales	**2016**	**2015**	**% Change**
	(in millions)		
Instrumentation	**$ 876.7**	$ 1,051.1	(16.6)%
Digital Imaging	**398.7**	379.0	5.2 %
Aerospace and Defense Electronics	**615.9**	593.4	3.8 %
Engineered Systems	**258.6**	274.6	(5.8)%
Total sales	**$ 2,149.9**	$ 2,298.1	(6.4)%

Results of operations	**2016**	**2015**	**% Change**
	(in millions)		
Instrumentation	**$ 109.8**	$ 171.0	(35.8)%
Digital Imaging	**45.9**	40.0	14.8 %
Aerospace and Defense Electronics	**112.1**	84.8	32.2 %
Engineered Systems	**32.1**	26.1	23.0 %
Corporate expense	**(46.1)**	(40.2)	14.7 %
Operating income	**253.8**	281.7	(9.9)%
Interest and debt expense, net	**(23.2)**	(23.9)	(2.9)%
Other income, net	**10.7**	0.4	*
Income before income taxes	**241.3**	258.2	(6.5)%
Provision for income taxes	**50.4**	62.7	(19.6)%
Net income	**190.9**	195.5	(2.4)%
Noncontrolling interest	**—**	0.3	(100.0)%
Net income attributable to Teledyne	**$ 190.9**	$ 195.8	(2.5)%

* not meaningful

Sales and cost of sales by segment and total company:

	2016	2015	Change
Instrumentation		(dollars in millions)	
Sales	**$ 876.7**	$ 1,051.1	$ (174.4)
Cost of sales	**$ 494.6**	$ 589.8	$ (95.2)
Cost of sales % of sales	**56.4%**	56.1%	
Digital Imaging			
Sales	**$ 398.7**	$ 379.0	$ 19.7
Cost of sales	**$ 239.4**	$ 228.0	$ 11.4
Cost of sales % of sales	**60.0%**	60.1%	
Aerospace and Defense Electronics			
Sales	**$ 615.9**	$ 593.4	$ 22.5
Cost of sales	**$ 377.5**	$ 383.8	$ (6.3)
Cost of sales % of sales	**61.3%**	64.7%	
Engineered Systems			
Sales	**$ 258.6**	$ 274.6	$ (16.0)
Cost of sales	**$ 206.5**	$ 226.2	$ (19.7)
Cost of sales % of sales	**79.9%**	82.4%	
Total Company			
Sales	**$ 2,149.9**	$ 2,298.1	$ (148.2)
Cost of sales	**$ 1,318.0**	$ 1,427.8	$ (109.8)
Cost of sales % of sales	**61.3%**	62.1%	

We reported 2016 sales of $2,149.9 million, compared with sales of $2,298.1 million for 2015, a decrease of 6.4%. Net income attributable to Teledyne was $190.9 million ($5.37 per diluted share) for 2016, compared with net income attributable to Teledyne of $195.8 million ($5.44 per diluted share) for 2015, a decrease of 2.5%.

Total year 2016 and 2015 reflected pretax charges totaling $17.3 million and $8.4 million, respectively, for severance and facility consolidation charges. Net income for 2016 and 2015 also included net discrete tax benefits of $10.9 million and $9.8 million, respectively. We also recorded a gain in 2016 of $17.9 million on the sale of a former operating facility in California, and incurred pretax charges totaling $7.9 million related to the pending e2v acquisition.

Sales

The decrease in sales in 2016, compared with 2015, reflected lower sales in the Instrumentation and Engineered Systems segments, partially offset by higher sales in the Aerospace and Defense and Electronics and Digital Imaging segments. Sales in the Instrumentation segment reflected $15.6 million of incremental sales from recent acquisitions while sales in the Digital Imaging segment reflected $9.6 million of incremental sales from recent acquisitions. The incremental sales from recent acquisitions in 2016 was $25.2 million.

Sales under contracts with the U.S. Government were approximately 27% of sales in 2016 and 26% of sales in 2015. Sales to international customers represented approximately 43% of sales in 2016 and 44% of sales in 2015.

Cost of Sales

Total company cost of sales decreased by $109.8 million in 2016, compared with 2015, which primarily reflected the impact of lower sales, partially offset by higher severance and facility consolidation expenses of $3.1 million. The total company cost of sales as a percentage of sales for 2016 was 61.3%, compared with 62.1% for 2015.

Selling, general and administrative expenses

Selling, general and administrative expenses, including Company-funded research and development and bid and proposal expense, in total dollars were lower in 2016, compared with 2015. The decrease reflected the impact of lower sales, partially offset by higher severance and facility consolidation expenses of $5.8 million. Corporate administrative expense in 2016 was $46.1 million, compared with $40.2 million in 2015, an increase of 14.7%. The increase in corporate administrative expense reflected higher professional fees expense, including $1.9 million related to the pending e2v acquisition. For 2016, we recorded a total of $11.6 million in stock option expense, of which $3.2 million was recorded as corporate expense and $8.4 million was recorded in the operating segment results. For 2015, we recorded a total of $12.2 million in stock option expense, of which $3.4 million was recorded as corporate expense and $8.8 million was recorded in the operating segment results. Selling, general and administrative expenses as a percentage of sales, was 26.9% for 2016, compared with 25.6% for 2015 and reflected the impact of higher research and development and bid and proposal expense, higher severance and facility consolidation expenses and professional fees expense related to the pending e2v acquisition.

Pension Income/Expense

Included in operating income in 2016 was pension income of $2.2 million compared with pension expense of $3.0 million in 2015. The change to pension income in 2016 from pension expense in 2015 primarily reflected the impact of using a 4.91 percent discount rate to determine the benefit obligation for the domestic plan in 2016 compared with a 4.50 percent discount rate used in 2015. Included in the $3.0 million of pension expense in 2015, in the first quarter of 2015, Teledyne froze its non-qualified pension plan for top executives which resulted in a one-time gain of $1.2 million. Pension expense allocated to contracts pursuant to U.S. Government Cost Accounting Standards ("CAS") was $13.8 million for both 2016 and 2015. Pension expense determined under CAS can generally be recovered through the pricing of products and services sold to the U.S. Government.

Operating Income

Operating income for 2016 was $253.8 million, compared with $281.7 million for 2015, a decrease of 9.9%. The decrease in operating income primarily reflected lower costs as a result of the lower sales. Operating income in 2016 and 2015 included $17.3 million and $8.4 million in severance and facility consolidation costs, respectively. The incremental operating loss included in the results for 2016 from recent acquisitions was $0.6 million which included $1.3 million in additional intangible asset amortization expense. Operating income in 2016 included pension income of $2.2 million compared to pension expense of $3.0 million in 2015.

Interest Expense and Other Income and Expense

Total interest expense, including credit facility fees and other bank charges, was $23.6 million in 2016, including $0.5 million related to the pending e2v acquisition, and $24.0 million in 2015. Interest income was $0.3 million in 2016 and $0.1 million in 2015. Other income for 2016 included a gain of $17.9 million on the sale of a former operating facility in California. Other income and expense in 2016 reflected $5.5 million of expense for a foreign currency hedge contract related to the pending e2v acquisition. Other income and expense in 2015 included net gains on legal settlements of $3.0 million.

Income Taxes

The Company's effective tax rate for 2016 was 20.9%, compared with 24.3% for 2015. Total year 2016 reflected $10.9 million in net discrete income tax benefits. The net discrete income tax benefits of $10.9 million, includes $6.7 million in income tax expense related to the $17.9 million gain on the sale of the operating facility and a $8.5 million income tax benefit related to the adoption of ASU 2016-09, as well as $9.1 million income tax benefit for the remeasurement of uncertain tax positions due to the expiration of statute of limitations, the release of valuation allowances and a favorable tax ruling in the Netherlands. Total year 2015 included net discrete tax benefits of $9.8 million primarily related to the remeasurement of uncertain tax positions which were mainly due to the expiration of statute of limitations and the release of valuation allowances. Total year 2016 and 2015 also included $4.1 million and $5.9 million in federal research and development tax credits, respectively. Excluding the net discrete income tax benefits in both years, and the gain and related taxes on the operating facility sale in 2016, the effective tax rates would have been 27.4% for 2016 and 28.1% for 2015.

2015 Compared with 2014

Sales	**2015**	**2014**	**% Change**
	(in millions)		
Instrumentation	**$ 1,051.1**	$ 1,115.5	(5.8)%
Digital Imaging	**379.0**	403.6	(6.1)%
Aerospace and Defense Electronics	**593.4**	603.0	(1.6)%
Engineered Systems	**274.6**	271.9	1.0 %
Total sales	**$ 2,298.1**	$ 2,394.0	(4.0)%

Results of operations	**2015**	**2014**	**% Change**
	(in millions)		
Instrumentation	**$ 171.0**	$ 181.6	(5.8)%
Digital Imaging	**40.0**	37.1	7.8 %
Aerospace and Defense Electronics	**84.8**	88.3	(4.0)%
Engineered Systems	**26.1**	31.4	(16.9)%
Corporate expense	**(40.2)**	(43.9)	(8.4)%
Operating income	**281.7**	294.5	(4.3)%
Interest and debt expense, net	**(23.9)**	(19.0)	25.8 %
Other income, net	**0.4**	6.6	(93.9)%
Income before income taxes	**258.2**	282.1	(8.5)%
Provision for income taxes	**62.7**	66.5	(5.7)%
Net income	**195.5**	215.6	(9.3)%
Noncontrolling interest	**0.3**	2.1	(85.7)%
Net income attributable to Teledyne	**$ 195.8**	$ 217.7	(10.1)%

Sales and cost of sales by segment and total company:

	2015	2014	Change
Instrumentation	(dollars in millions)		
Sales	**$ 1,051.1**	$ 1,115.5	$ (64.4)
Cost of sales	**$ 589.8**	$ 630.0	$ (40.2)
Cost of sales % of sales	**56.1%**	56.5%	
Digital Imaging			
Sales	**$ 379.0**	$ 403.6	$ (24.6)
Cost of sales	**$ 228.0**	$ 252.0	$ (24.0)
Cost of sales % of sales	**60.1%**	62.4%	
Aerospace and Defense Electronics			
Sales	**$ 593.4**	$ 603.0	$ (9.6)
Cost of sales	**$ 383.8**	$ 386.6	$ (2.8)
Cost of sales % of sales	**64.7%**	64.2%	
Engineered Systems			
Sales	**$ 274.6**	$ 271.9	$ 2.7
Cost of sales	**$ 226.2**	$ 218.5	$ 7.7
Cost of sales % of sales	**82.4%**	80.4%	
Total Company			
Sales	**$ 2,298.1**	$ 2,394.0	$ (95.9)
Cost of sales	**$ 1,427.8**	$ 1,487.1	$ (59.3)
Cost of sales % of sales	**62.1%**	62.1%	

We reported 2015 sales of $2,298.1 million, compared with sales of $2,394.0 million for 2014, a decrease of 4.0%. Net income attributable to Teledyne was $195.8 million ($5.44 per diluted share) for 2015, compared with net income attributable to Teledyne of $217.7 million ($5.75 per diluted share) for 2014, a decrease of 10.1%. Total year 2015 and 2014 reflected pretax charges totaling $8.4 million and $4.2 million, respectively, for severance charges. Net income for 2015 and 2014 also included net discrete tax benefits of $9.8 million and $8.9 million, respectively.

Sales

The decrease in sales in 2015, compared with 2014, reflected lower sales in each segment except the Engineered Systems segment. Sales in the Instrumentation segment reflected $32.1 million of incremental sales from recent acquisitions while sales in the Digital Imaging segment reflected $6.8 million of incremental sales from a recent acquisition. The incremental increase in revenue in 2015 from businesses acquired in 2015 and in 2014 was $38.9 million.

Sales under contracts with the U.S. Government were approximately 26% of sales in 2015 and 25% of sales in 2014. Sales to international customers represented approximately 44% of sales in 2015 and 45% of sales in 2014.

Cost of Sales

Total company cost of sales decreased by $59.3 million in 2015, compared with 2014, primarily due to lower sales. The total company cost of sales as a percentage of sales was 62.1%, for both 2015 and 2014.

Selling, general and administrative expenses

Selling, general and administrative expenses, including Company-funded research and development and bid and proposal expense, in total dollars were lower in 2015 compared with 2014. The decrease reflected the impact of lower sales and lower corporate administrative expense. Corporate administrative expense in 2015 was $40.2 million, compared with $43.9 million in 2014, a decrease of 8.4%. The decrease in corporate administrative expense reflected lower compensation and professional fees expense. For 2015, we recorded a total of $12.2 million in stock option expense, of which $3.4 million was recorded as corporate expense and $8.8 million was recorded in the operating segment results. For 2014, we recorded a total of $14.0 million in stock option expense, of which $4.5 million was recorded as corporate expense and $9.5 million was recorded in the operating segment results. Stock option expense in 2015 was lower than in 2014 primarily due to the absence of stock option grants in 2015. Selling, general and administrative expenses as a percentage of sales, were 25.6% for both 2015 and 2014.

Pension Income/Expense

Included in operating income in 2015 was pension expense of $3.0 million compared with pension income of $1.3 million in 2014. The change to pension expense in 2015 from pension income in 2014 primarily reflected the impact of using a 4.5 percent discount rate to determine the benefit obligation for the domestic plan in 2015 compared with a 5.4 percent discount rate used in 2014. In the first quarter of 2015, Teledyne froze its non-qualified pension plan for top executives which resulted in a one-time gain of $1.2 million. Pension expense allocated to contracts pursuant to CAS was $13.8 million for both 2015 and 2014.

Operating Income

Operating income for 2015 was $281.7 million, compared with $294.5 million for 2014, a decrease of 4.3%. Operating income reflected the impact of lower sales. Operating income in 2015 and 2014 included $8.4 million and $4.2 million in severance costs, respectively. The incremental operating loss included in the results for 2015 from recent acquisitions was $3.7 million which included $3.3 million in additional intangible asset amortization expense. Operating income in 2015 included pension expense of $3.0 million compared to pension income of $1.3 million in 2014.

Interest Expense and Other Income and Expense

Total interest expense, including credit facility fees and other bank charges, was $24.0 million in 2015 and $19.2 million in 2014. The increase in interest expense primarily reflected the impact of higher outstanding debt levels, due to recent acquisitions and stock repurchases. Interest income was $0.1 million in 2015 and $0.2 million in 2014. Other income and expense in 2015 and 2014 included net gains on legal settlements of $3.0 million and $6.5 million, respectively.

Income Taxes

The Company's effective tax rate for 2015 was 24.3%, compared with 23.6% for 2014. Total year 2015 included net discrete tax benefits of $9.8 million primarily related to the remeasurement of uncertain tax positions which were mainly due to the expiration of statute of limitations and the release of valuation allowances. Total year 2015 also included $5.9 million in federal research and development tax credits. Total year 2014 included net discrete tax benefits of $8.9 million primarily related to the remeasurement of uncertain tax positions, which were mainly due to an expiration of statute of limitations and the favorable resolution of a tax matter. Total year 2014 also included $5.6 million in federal research and development tax credits. Excluding the impact of the net discrete tax benefits of $9.8 million for 2015 and $8.9 million for 2014, the effective tax rates would have been 28.1% for 2015, compared with 26.7% for 2014.

Segments

The following discussion of our four segments should be read in conjunction with Note 12 to the Notes to Consolidated Financial Statements.

Instrumentation

(Dollars in millions)	2016	2015	2014
Sales	**$ 876.7**	$ 1,051.1	$ 1,115.5
Cost of sales	**$ 494.6**	$ 589.8	$ 630.0
Selling, general and administrative expenses	**$ 272.3**	$ 290.3	$ 303.9
Operating income	**$ 109.8**	$ 171.0	$ 181.6
Cost of sales % of sales	**56.4%**	56.1%	56.5%
Selling, general and administrative expenses % of sales	**31.1%**	27.6%	27.2%
Operating income % of sales	**12.5%**	16.3%	16.3%
International sales % of sales	**53.8%**	58.2%	58.1%
U.S. Government sales % of sales	**8.5%**	5.8%	3.5%
Capital expenditures	**$ 50.9**	**$ 20.9**	$ 17.0

Our Instrumentation segment provides monitoring and control instruments for marine, environmental, industrial and other applications, as well as electronic test and measurement equipment. We also provide power and communications connectivity devices for distributed instrumentation systems and sensor networks deployed in mission critical, harsh environments.

2016 compared with 2015

Our Instrumentation segment sales were $876.7 million in 2016 compared with sales of $1,051.1 million in 2015, a decrease of 16.6%. Operating income was $109.8 million in 2016, compared with $171.0 million in 2015, a decrease of 35.8%. The 2016 sales decrease primarily resulted from lower sales of marine instrumentation partially offset by increased sales of test and measurement instrumentation. Sales for marine instrumentation decreased $195.3 million and primarily reflected lower sales of interconnect systems and other marine sensors for energy exploration and production, as a result of weak energy markets, partially offset by higher sales of interconnects and marine systems for U.S. Government applications. Sales of test and measurement instrumentation increased $19.5 million and included $15.4 million in incremental sales from recent acquisitions. Sales of environmental instrumentation increased $1.4 million. The decrease in operating income primarily reflected the impact of lower sales and also reflected $6.8 million in higher severance and facility consolidation costs compared with 2015. The incremental operating profit from recent acquisitions was $0.9 million, which included $0.8 million in additional intangible asset amortization.

Cost of sales decreased by $95.2 million in 2016, compared with 2015, and primarily reflected the impact of lower sales, partially offset by higher severance and facility consolidation expenses. The cost of sales percentage increased slightly to 56.4% in 2016 from 56.1% in 2015. Selling, general and administrative expenses, including research and development and bid and proposal expense, in 2016, decreased by $18.0 million, compared with 2015, and primarily reflected the impact of lower sales. Selling, general and administrative expenses for 2016, as a percentage of sales, increased to 31.1%, compared with 27.6% for 2015 and reflected the impact of lower sales while certain fixed costs decreased slightly.

2015 compared with 2014

Our Instrumentation segment sales were $1,051.1 million in 2015 compared with sales of $1,115.5 million in 2014, a decrease of 5.8%. Operating income was $171.0 million in 2015, compared with $181.6 million in 2014, a decrease of 5.8%. The 2015 sales decrease resulted from lower sales of marine instrumentation and electronic test and measurement instrumentation, while sales for environmental instrumentation increased slightly. Sales for marine instrumentation decreased by $40.8 million and primarily reflected lower sales of geophysical sensors for offshore oil exploration, interconnect systems for land-based energy applications, and other marine sensors and systems, partially offset by $32.1 million in incremental sales from recent acquisitions. Sales of electronic test and measurement instrumentation decreased $23.9 million primarily as a result of lower international sales due in part to the impact of foreign exchange rates. Sales of environmental instrumentation increased $0.3 million. The decrease in operating income primarily reflected the impact of lower sales as well as $2.9 million in higher severance costs compared with 2014. The incremental operating loss from recent acquisitions was $4.6 million, which included $3.0 million in additional intangible asset amortization.

Cost of sales decreased by $40.2 million in 2015, compared with 2014, and primarily reflected the impact of lower sales. The cost of sales percentage decreased slightly to 56.1% from 56.5%. Selling, general and administrative expenses, including research and development and bid and proposal expense, in 2015, decreased by $13.6 million, compared with 2014, and

primarily reflected the impact of lower sales. Selling, general and administrative expenses for 2015, as a percentage of sales, increased slightly to 27.6%, compared with 27.2% for 2014.

Digital Imaging

(Dollars in millions)	2016	2015	2014
Sales	**$ 398.7**	$ 379.0	$ 403.6
Cost of sales	**$ 239.4**	$ 228.0	$ 252.0
Selling, general and administrative expenses	**$ 113.4**	$ 111.0	$ 114.5
Operating income	**$ 45.9**	$ 40.0	$ 37.1
Cost of sales % of sales	**60.0%**	60.1%	62.4%
Selling, general and administrative expenses % of sales	**28.5%**	29.3%	28.4%
Operating income % of sales	**11.5%**	10.6%	9.2%
International sales % of sales	**54.7%**	51.0%	50.2%
U.S. Government sales % of sales	**18.3%**	20.8%	25.3%
Capital expenditures	**$ 12.5**	$ 9.2	$ 10.3

Our Digital Imaging segment includes high-performance sensors, cameras and systems, within the visible, infrared and X-ray spectra for use in industrial, government and medical applications, as well as micro electro-mechanical systems ("MEMS"). It also includes our sponsored and centralized research laboratories which benefit government programs and commercial businesses.

2016 compared with 2015

Our Digital Imaging segment sales were $398.7 million in 2016, compared with sales of $379.0 million in 2015, an increase of 5.2%. Operating income was $45.9 million in 2016, compared with $40.0 million in 2015, an increase of 14.8%.

The 2016 sales increase primarily reflected higher sales of sensors and systems for life sciences and industrial X-ray applications, MEMS and geospatial software. Sales in 2016 included $9.6 million in incremental sales from recent acquisitions. The increase in operating income in 2016, compared with 2015, reflected the impact of higher sales and favorable product mix. The incremental operating loss included in the results for 2016 from recent acquisitions was $1.5 million, which included $0.5 million in additional intangible asset amortization expense.

Cost of sales for 2016 increased by $11.4 million, compared with 2015, and primarily reflected the impact of higher sales. The cost of sales percentage in 2016 decreased slightly. Selling, general and administrative expenses, for 2016, increased to $113.4 million, compared with $111.0 million in 2015 and primarily reflected higher research and development expense and the impact of higher sales, partially offset by lower general and administrative costs. The selling, general and administrative expense percentage decreased to 28.5% in 2016 from 29.3% in 2015.

2015 compared with 2014

Our Digital Imaging segment sales were $379.0 million in 2015, compared with sales of $403.6 million in 2014, a decrease of 6.1%. Operating income was $40.0 million in 2015, compared with $37.1 million in 2014, an increase of 7.8%.

The 2015 sales decrease primarily reflected lower sales from U.S. Government research and development contracts and reduced sales of machine vision cameras for semiconductor and electronics inspection and of infrared imaging systems, partially offset by increased sales of sensors and cameras for life sciences and general industrial applications. Sales in 2015 included $6.8 million in incremental sales from a recent acquisition. Operating income in 2015 increased, compared with 2014, despite lower sales, and reflected the impact of improved margins across a number of product categories as a result of ongoing cost reductions and improved contract performance and also included $0.9 million in operating income from a recent acquisition.

Cost of sales for 2015 decreased by $24.0 million, compared with 2014, and primarily reflected the impact of lower costs as a result of ongoing cost reduction actions and product mix differences. The decrease in the cost of sales percentage primarily reflected lower costs as a result of ongoing cost reduction actions and a greater mix of higher gross margin commercial sales. Selling, general and administrative expenses, for 2015, decreased to $111.0 million, compared with $114.5 million in 2014 and primarily reflected lower general and administrative expenses. The selling, general and administrative expense percentage increased to 29.3% in 2015 from 28.4% in 2014 and reflected higher research and development spending.

Aerospace and Defense Electronics

(Dollars in millions)	2016	2015	2014
Sales	**$ 615.9**	$ 593.4	$ 603.0
Cost of sales	**$ 377.5**	$ 383.8	$ 386.6
Selling, general and administrative expenses	**$ 126.3**	$ 124.8	$ 128.1
Operating income	**$ 112.1**	$ 84.8	$ 88.3
Cost of sales % of sales	**61.3%**	64.7%	64.2%
Selling, general and administrative expenses % of sales	**20.5%**	21.0%	21.2%
Operating income % of sales	**18.2%**	14.3%	14.6%
International sales % of sales	**32.6%**	31.8%	32.2%
U.S. Government sales % of sales	**34.2%**	37.7%	40.7%
Capital expenditures	**$ 12.6**	$ 9.1	$ 8.8

Our Aerospace and Defense Electronics segment provides sophisticated electronic components and subsystems and communications products, including defense electronics, harsh environment interconnects, data acquisition and communications equipment for aircraft, and components and subsystems for wireless and satellite communications, as well as general aviation batteries. In the third quarter of 2016, Teledyne completed the disposition of the net assets of its PCT business. Sales for this business totaled $10.1 million, $16.6 million and $18.8 million for 2016, 2015 and 2014, respectively. For 2016, PCT reported a pretax loss of $3.1 million, compared with a pretax loss of $3.9 million in 2015 and pretax income of $1.1 million in 2014.

2016 compared with 2015

Our Aerospace and Defense Electronics segment sales were $615.9 million in 2016, compared with sales of $593.4 million in 2015, an increase of 3.8%. Operating income was $112.1 million in 2016, compared with $84.8 million in 2015, an increase of 32.2%.

Sales for 2016, compared with 2015, increased by $22.5 million and reflected higher sales of $26.3 million from avionics products and electronic relays partially offset by lower sales of $3.7 million from electronic manufacturing services products. The lower sales from electronic manufacturing services products reflected $6.5 million in lower sales from the PCT business, sold in July 2016. Operating income in 2016 increased by $27.3 million and reflected the impact of higher sales, as well as overall improved margins, partially offset by $3.4 million in higher severance and facility and consolidation costs. Operating income in 2016 reflected higher pension income of $2.4 million and 2015 included the reversal of facility and consolidation reserves of $1.7 million no longer needed.

Cost of sales for 2016 decreased by $6.3 million, compared with 2015, and reflected the impact of favorable product mix and higher pension income and higher pension income. Cost of sales as a percentage of sales for 2016 decreased to 61.3% from 64.7% in 2015 and reflected favorable product mix and the impact of higher pension income. Selling, general and administrative expenses, including research and development and bid and proposal expense, increased to $126.3 million in 2016, compared with $124.8 million in 2015. The selling, general and administrative expense percentage in 2016 decreased to 20.5% from 21.0% for 2015.

2015 compared with 2014

Our Aerospace and Defense Electronics segment sales were $593.4 million in 2015, compared with sales of $603.0 million in 2014, a decrease of 1.6%. Operating income was $84.8 million in 2015, compared with $88.3 million in 2014, a decrease of 4.0%.

Sales for 2015, compared with 2014, decreased by $9.6 million and reflected lower sales of $19.8 million from microwave and interconnect systems and lower sales of $13.3 million from electronic manufacturing services products, partially offset by increased sales of $23.5 million from avionics products and electronic relays. Operating income in 2015 decreased by $3.5 million and reflects the impact of lower sales, as well as lower margins for most defense electronics products. Operating income in 2015 reflected higher pension expense of $1.9 million and the reversal of facility and consolidation reserves of $1.7 million no longer needed.

Cost of sales for 2015 decreased by $2.8 million, compared with 2014, and reflected the impact of lower sales, partially offset by higher pension expense. Cost of sales as a percentage of sales for 2015 increased slightly to 64.7% from 64.2% in 2014. Selling, general and administrative expenses, including research and development and bid and proposal expense, decreased to $124.8 million in 2015, compared with $128.1 million in 2014, and reflected the impact of lower sales. The selling, general and administrative expense percentage in 2015 decreased slightly to 21.0% from 21.2% for 2014.

Engineered Systems

(Dollars in millions)	2016	2015	2014
Sales	**$ 258.6**	$ 274.6	$ 271.9
Cost of sales	**$ 206.5**	$ 226.2	$ 218.5
Selling, general and administrative expenses	**$ 20.0**	$ 22.3	$ 22.0
Operating income	**$ 32.1**	$ 26.1	$ 31.4
Cost of sales % of sales	**79.9%**	82.4%	80.4%
Selling, general and administrative expenses % of sales	**7.7%**	8.1%	8.1%
Operating income % of sales	**12.4%**	9.5%	11.5%
International sales % of sales	**11.2%**	9.9%	9.0%
U.S. Government sales % of sales	**85.0%**	85.4%	81.6%
Capital expenditures	**$ 5.9**	$ 5.7	$ 4.3

Our Engineered Systems segment provides innovative systems engineering and integration, advanced technology development, and manufacturing solutions for defense, space, environmental and energy applications. This segment also designs and manufactures electrochemical energy systems and small turbine engines.

2016 compared with 2015

Our Engineered Systems segment sales were $258.6 million in 2016, compared with sales of $274.6 million in 2015, a decrease of 5.8%. Operating income was $32.1 million in 2016, compared with $26.1 million in 2015, an increase of 23.0%.

The 2016 sales decrease of $16.0 million reflected lower sales of engineered products and services of $12.7 million and lower energy system products of $4.8 million, partially offset by higher sales of turbine engine sales of $1.5 million. The lower sales of engineered products and services primarily resulted from decreased sales of space and missile defense programs. The lower energy systems sales reflected lower sales of commercial hydrogen generators, as well as government energy systems. Operating income in 2016 reflected improved margins for engineered products and services and higher pension income of $2.5 million, partially offset by the impact of lower sales.

Cost of sales for 2016 decreased by $19.7 million, compared with 2015, and reflected the impact of lower sales and higher pension income. Cost of sales as a percentage of sales for 2016 decreased to 79.9%, compared with 82.4% in 2015 reflected the lower margin space and marine manufacturing programs ending in 2015 and also reflected the impact of higher pension income. Selling, general and administrative expenses, including research and development and bid and proposal expense, decreased to $20.0 million in 2016, compared with $22.3 million in 2015, and reflected the impact of lower sales. The selling, general and administrative expense percentage decreased to 7.7% for 2016, compared with 8.1% in 2015.

2015 compared with 2014

Our Engineered Systems segment sales were $274.6 million in 2015, compared with sales of $271.9 million in 2014, an increase of 1.0%. Operating income was $26.1 million in 2015, compared with $31.4 million in 2014, a decrease of 16.9%.

The 2015 sales increase of $2.7 million reflected higher sales of energy systems products of $6.5 million and engineered products and services of $4.0 million. The higher energy systems sales primarily reflected increased sales for government energy systems. Turbine engine sales were lower by $7.8 million and reflected decreased sales for the Joint Air-to-Surface Standoff Missile program. Operating income in 2015 reflected the impact of higher sales more than offset by the impact of lower sales of higher margin turbine engines and higher pension expense of $2.0 million.

Cost of sales for 2015 increased by $7.7 million, compared with 2014, and reflected the higher sales and higher pension expense. Cost of sales as a percentage of sales for 2015 increased to 82.4%, compared with 80.4% in 2014 and reflected the impact of higher pension expense and lower sales of higher margin turbine engines. Selling, general and administrative expenses, including research and development and bid and proposal expense, increased to $22.3 million in 2015, compared with $22.0 million in 2014, and reflected the impact of higher sales. The selling, general and administrative expense percentage remained at 8.1% for 2015, compared with 2014.

Financial Condition, Liquidity and Capital Resources

Principal Capital Requirements

Our principal cash and capital requirements are to fund working capital needs, capital expenditures, income tax payments, pension contributions and debt service requirements, as well as acquisitions and the pending e2v acquisition. We may also deploy cash for the stock repurchase program. It is anticipated that operating cash flow, together with available borrowings under the credit facility described below, will be sufficient to meet these requirements and could be used to fund acquisitions in 2017. To support acquisitions, we may need to raise additional capital. Our liquidity is not dependent upon the use of off-balance sheet financial arrangements. We have no off-balance sheet financing arrangements that incorporate the use of special purpose or unconsolidated entities.

Credit Facility, Senior Notes and Term Loans

In December 2016, the Company entered into an amendment relating to unsecured term loans of $182.5 million in aggregate principal amount (the "Term Loans") to extend the maturity date of the Term Loans from March 1, 2019 to January 31, 2022 and extending the date on which amortization of principal begins; and generally lowering the applicable rate for base rate and Eurocurrency loans. The other material terms of the Term Loans, including covenants, remain unchanged. In November 2015, the Company issued $125.0 million in aggregate principal amount of senior unsecured notes ("senior unsecured notes"). The notes consisted of $25.0 million of 2.81% senior unsecured notes due in November 2020, and $100.0 million of 3.28% senior unsecured notes due in November 2022. Also in December 2015, the Company amended the $750.0 million unsecured credit facility ("credit facility") to extend the maturity from March 2018 to December 2020. Excluding interest and fees, no payments are due under the credit facility until it matures. Borrowings under our credit facility and term loans are at variable rates which are, at our option, tied to a Eurocurrency rate equal to LIBOR (London Interbank Offered Rate) plus an applicable rate or a base rate as defined in our credit agreements. Eurocurrency rate loans may be denominated in U.S. dollars or an alternative currency as defined in the agreement. Eurocurrency or LIBOR based loans under the facility typically have terms of one, two, three or six months and the interest rate for each such loan is subject to change if the loan is continued or converted following the applicable maturity date. The Company has not drawn any loans with a term longer than three months under the credit facility. Base rate loans have interest rates that primarily fluctuate with changes in the prime rate. Interest rates are also subject to change based on our consolidated leverage ratio as defined in the credit agreement. The credit facility also provides for facility fees that vary between 0.12% and 0.25% of the credit line, depending on our consolidated leverage ratio as calculated from time to time.

In connection with the agreement to acquire e2v, Teledyne, together with certain of its subsidiaries as guarantors, has entered into a Credit Agreement (the "Bridge Facility") dated December 11, 2016. The lenders under the Bridge Facility are committed to lend up to £345.0 million to fund the acquisition, and Teledyne has committed to have remain available for borrowing up to $410.0 million under its $750.0 million credit facility to fund the acquisition. No amounts have been drawn against the Bridge Facility to date.

Long-term debt (in millions):	**January 1, 2017**	**January 3, 2016**
$750.0 million credit facility, due December 2020, weighted average rate of 1.67% at January 3, 2016	**$ —**	$ 150.5
Term Loans due through January 2022, weighted average rate of 1.90% at January 1, 2017, and 1.55% at January 3, 2016	**182.5**	190.0
4.74% Fixed Rate Senior Notes due September 2017	**100.0**	100.0
2.61% Fixed Rate Senior Notes due December 2019	**30.0**	30.0
5.30% Fixed Rate Senior Notes due September 2020	**75.0**	75.0
2.81% Fixed Rate Senior Notes due November 2020	**25.0**	25.0
3.09% Fixed Rate Senior Notes due December 2021	**95.0**	95.0
3.28% Fixed Rate Senior Notes due November 2022	**100.0**	100.0
Other debt	**4.2**	—
Total long-term debt	**611.7**	765.5
Current portion of long-term debt and debt issue costs	**(102.0)**	(11.4)
Total long-term debt, net of current portion	**$ 509.7**	$ 754.1

At January 1, 2017, we had $7.4 million in capital leases, of which $1.3 million is current and had $15.5 million in outstanding letters of credit.

Our credit facility, senior notes and term loans agreements require the Company to comply with various financial and operating covenants, including maintaining certain consolidated leverage and interest coverage ratios, as well as minimum net worth levels and limits on acquired debt. At January 1, 2017, the Company was in compliance with these covenants and we had a significant amount of margin between required financial covenant ratios and our actual ratios. Currently, we do not believe our ability to undertake additional debt financing, if needed, is reasonably likely to be materially impacted by debt restrictions under our credit agreements subject to our complying with required financial covenants listed in the table below.

Financial covenant ratios and the actual ratios at January 1, 2017:

$750.0 million Credit Facility expires December 2020 and $182.5 million term loans due through January 2022 (issued in October 2012)

Financial Covenant	Requirement	Actual Measure
Consolidated Leverage Ratio (Net Debt/EBITDA) (a)	No more than 3.25 to 1	1.7 to 1
Consolidated Interest Coverage Ratio (EBITDA/Interest) (b)	No less than 3.0 to 1	16.0 to 1

$425.0 million Private Placement Senior Notes due from 2017 to 2022

Financial Covenant	Requirement	Actual Measure
Consolidated Leverage Ratio (Net Debt/EBITDA) (a)	No more than 3.25 to 1	1.7 to 1
Consolidated Interest Coverage Ratio (EBITDA/Interest) (b)	No less than 3.0 to 1	16.0 to 1

(a) The Consolidated Leverage Ratio is equal to Net Debt/EBITDA as defined in our private placement note purchase agreement and our $750.0 million credit agreement.

(b) The Consolidated Interest Coverage Ratio is equal to EBITDA/Interest as defined in our private placement note purchase agreement and our $750.0 million credit agreement.

In the event of an acquisition, our debt instruments permit us, at our option, to exceed the Consolidated Leverage Ratio of 3.25 to 1 for up to four quarters following the fiscal quarter in which the acquisition event occurs, provided that the Consolidated Leverage Ratio does not exceed 3.5 to 1. If the pending acquisition of e2v closes, we expect to remain in compliance with this financial ratio as a result.

Available borrowing capacity under the $750.0 million credit facility, which is reduced by borrowings and outstanding letters of credit, was $735.5 million at January 1, 2017; noting, however, that Teledyne has committed to have remain available for borrowing up to $410.0 million under this facility to fund the pending e2v acquisition.

Teledyne also has a $5.0 million uncommitted credit line which permits credit extensions up to $5.0 million plus an incremental $2.0 million solely for standby letters of credit. This credit line is utilized, as needed, for periodic cash needs. At January 1, 2017, $3.5 million was outstanding under the uncommitted credit line. No amounts were outstanding under this credit line at January 3, 2016.

Permanently Reinvested Earnings

We intend to indefinitely reinvest the earnings of our material foreign subsidiaries in our operations outside of the United States. The cash that the Company's foreign subsidiaries hold for indefinite reinvestment is generally used to finance foreign operations and investments, including acquisitions. We expect to fund a portion of the cost of the e2v acquisition with cash held by our foreign subsidiaries. We estimate that future domestic cash generation will be sufficient to meet future domestic cash requirements. At January 1, 2017, the amount of undistributed foreign earnings was $226.6 million, of which we have not recorded a deferred tax liability of approximately $59.0 million. Should we decide to repatriate the foreign earnings, we would need to adjust our income tax provision in the period we determined that the earnings will no longer be indefinitely invested outside the United States.

Contractual Obligations

The following table summarizes our expected cash outflows resulting from financial contracts and commitments at January 1, 2017. We have not included information on our normal recurring purchases of materials for use in our operations. We have also not included any amounts that may be required related to our pending acquisition of e2v.

The amounts in the following table are generally consistent from year to year, closely reflect our levels of production and are not long-term in nature:

Contractual obligations (in millions):	2017	2018	2019	2020	2021	After 2021	Total
Debt obligations	$100.7	$ 1.1	$ 34.6	$108.6	$102.4	$ 264.3	$ 611.7
Interest expense(a)	19.6	15.5	15.3	11.9	9.2	1.4	72.9
Operating lease obligations	18.1	17.1	14.6	13.4	12.3	55.9	131.4
Capital lease obligations(b)	1.3	1.3	1.4	1.1	1.1	2.2	8.4
Purchase obligations (c)	74.4	3.7	2.0	1.7	0.7	1.9	84.4
Total	$214.1	$ 38.7	$ 67.9	$136.7	$125.7	$ 325.7	$ 908.8

(a) Interest expense related to the credit facility, including facility fees, is assumed to accrue at the rates in effect at year-end 2016 and is assumed to be paid at the end of each quarter with the final payment in December 2020 when the credit facility expires.
(b) Includes imputed interest and short-term portion.
(c) Purchase obligations generally include contractual obligations for the purchase of goods and services.

Unrecognized tax benefits of $24.5 million are not included in the table above because $7.1 million is offset by deferred tax assets, and the remainder cannot be reasonably estimated to be settled in cash due to a lack of prior settlement history.

At January 1, 2017, we were not required, and accordingly are not planning, to make any cash contributions to the domestic qualified pension plan for 2017. Our minimum funding requirements after 2017, as set forth by ERISA, are dependent on several factors as discussed under "Accounting for Pension Plans" in the Critical Accounting Policies section of this Management's Discussion and Analysis of Financial Condition and Results of Operation. Estimates beyond 2017 have not been provided due to the significant uncertainty of these amounts, which are subject to change until the Company's pension assumptions can be updated at the appropriate times. In addition, certain pension contributions are eligible for future recovery through the pricing of products and services to the U.S. government under certain government contracts, therefore, the amounts noted are not necessarily indicative of the impact these contributions may have on our liquidity. We also have payments due under our other postretirement benefit plans. These plans are not required to be funded in advance, but are pay as you go. See further discussion in Note 11 of the Notes to our Consolidated Financial Statements. Teledyne intends to continue to monitor and manage its defined benefit pension plans obligation and may take additional actions to manage risk in the future.

Operating Activities

In 2016, net cash provided by operating activities was $317.0 million, compared with $210.2 million in 2015 and $287.9 million in 2014. The higher cash provided by operating activities in 2016, compared with 2015, reflected $61.9 million in lower income tax payments, lower annual bonus and regular payroll payments and higher customer advanced payments, partially offset by higher payments for severance, facility closure and relocation costs and lower operating income. The 2015 amounts reflected the receipt of $3.0 million related to a legal settlement while the 2014 amount reflected the receipt of $10.0 million related to a legal settlement. The lower cash provided by operating activities in 2015, compared with 2014, reflected lower net income, lower customer deposits and advanced payments and higher income tax payments.

Free cash flow (cash provided by operating activities less capital expenditures) was $229.4 million in 2016, compared with $163.2 million in 2015 and $244.4 million in 2014. Adjusted free cash flow reflects utilization of restricted cash from the sale of a former operating facility which funded, in part, the facility purchase pursuant to a 1031 like-kind exchange and was $248.9 million in 2016, compared with $163.2 million in 2015 and $244.4 million in 2014.

Free Cash Flow(a) (in millions, brackets indicate use of funds)	**2016**	**2015**	**2014**
Cash provided by operating activities	**$317.0**	$210.2	$287.9
Capital expenditures for property, plant and equipment, excluding facility purchase	**(61.6)**	(47.0)	(43.5)
Facility purchase pursuant to 1031 like-kind exchange	**(26.0)**	—	—
Total capital expenditures	**(87.6)**	(47.0)	(43.5)
Free cash flow	**229.4**	163.2	244.4
Restricted cash utilized for 1031 like-kind exchange facility purchase	**19.5**	—	—
Adjusted free cash flow	**$248.9**	$163.2	$244.4

a) We define free cash flow as cash provided by operating activities (a measure prescribed by generally accepted accounting principles) less capital expenditures for property, plant and equipment. Adjusted free cash flow reflects utilization of restricted cash from the sale of a former operating facility which funded, in part, the facility purchase pursuant to a 1031 like-kind exchange. The company believes that this supplemental non-GAAP information is useful to assist management and the investment community in analyzing the company's ability to generate cash flow.

Selected balance sheet changes (in millions):	**2016**	**2015**
Cash	**$ 98.6**	$ 85.1
Current portion of long-term debt, capital leases and other debt	**$ 102.0**	$ 19.1
Long-term debt and capital lease obligations, net of current portion	**$ 515.8**	$ 761.5
Treasury stock	**$ 242.9**	$ 309.9
Accumulated other comprehensive loss	**$ 451.2**	$ 413.2

The increase in the current portion of long-term debt primarily reflects the expected repayment in 2017 of $100.0 million in term loans. The increase in accumulated other comprehensive loss reflects the impact of foreign currency adjustments and the non-cash reduction to stockholders' equity for the pension and postretirement plans.

Investing Activities

Net cash used in investing activities was $151.0 million, $109.9 million and $238.7 million for 2016, 2015 and 2014, respectively. Cash flows relating to investing activities consists primarily of cash used for acquisitions and capital expenditures, except 2016 also includes $9.3 million of cash received from the sale of a business and cash received of $19.5 million from the sale of a former operating facility.

Capital expenditures (in millions):	**2016**	**2015**	**2014**
Instrumentation	**$ 50.9**	$ 20.9	$ 17.0
Digital Imaging	**12.5**	9.2	10.3
Aerospace and Defense Electronics	**12.6**	9.1	8.8
Engineered Systems	**5.9**	5.7	4.3
Corporate	**5.7**	2.1	3.1
	$ 87.6	$ 47.0	$ 43.5

The increase in capital spending in 2016, compared with 2015, primarily reflected the purchase of an operating facility. During 2017 we plan to invest approximately $60.0 million in capital expenditures, principally to upgrade capital equipment, reduce manufacturing costs and introduce new products. Commitments at January 1, 2017, for capital expenditures were approximately $9.5 million.

Acquisitions

Investing activities used cash for acquisitions and investments of $93.4 million, $66.7 million and $195.8 million, in 2016, 2015 and 2014, respectively (see "Recent Acquisitions").

Teledyne funded the acquisitions primarily from borrowings under its credit facility and cash on hand.

For all acquisitions, the results of operations and cash flows are included in our consolidated financial statements from the date of each respective acquisition. The CARIS, ICM and Axiom acquisitions are part of the Digital Imaging segment. All other acquisitions in 2016, 2015 and 2014 are part of the Instrumentation segment.

The following table shows the purchase price (net of cash acquired), goodwill acquired and intangible assets acquired for the acquisitions and other investments made in 2016 and 2015 (in millions):

		2016		
Acquisition	**Acquisition Date**	**Cash Paid (a)**	**Goodwill Acquired**	**Acquired Intangible Assets**
Frontline	April 6, 2016	**$ 13.7**	**$ 11.3**	**$ 2.3**
Quantum Data	April 15, 2016	**17.3**	**10.7**	**5.4**
CARIS	May 3, 2016	**26.2**	**22.2**	**3.6**
IN USA	November 2, 2016	**10.2**	**6.3**	**3.0**
Hanson Research	December 6, 2016	**25.0**	**13.5**	**8.4**
Other investments		**1.0**	—	—
		$ 93.4	**$ 64.0**	**$ 22.7**

(a) net of any cash acquired and any purchase price adjustments.

		2015		
Acquisition	**Acquisition Date**	**Cash Paid (a)**	**Goodwill Acquired**	**Acquired Intangible Assets**
Bowtech	February 2, 2015	$ 18.9	$ 7.0	$ 4.3
ICM	June 5, 2015	21.8	19.2	5.8
Purchase of remaining interest of Optech	April 29, 2015	22.0	—	—
Other Investments		4.0	1.4	0.9
		$ 66.7	$ 27.6	$ 11.0

(a) net of any cash acquired.

Goodwill resulting from the acquisitions of Frontline, Quantum Data, IN USA and CARIS made in 2016 will be deductible for tax purposes. Goodwill resulting from the 2016 acquisition of Hanson Research and the 2015 acquisitions of Bowtech and ICM will not be deductible for tax purposes.

Financing Activities

Financing activities for 2016 reflected net payments on debt of $163.1 million, compared with net payments on debt of $47.6 million in 2015 and net proceeds from debt of $29.5 million for 2014. In addition, in both 2015 and 2014, the Company issued $125.0 million of senior unsecured notes. Financing activities in 2016 also included the payment of $11.6 million for an option contract in connection with the pending e2v acquisition.

Fiscal years 2016, 2015 and 2014 reflect proceeds from the exercise of stock options of $36.1 million, $19.0 million and $18.3 million, respectively. Financing activities for 2015 and 2014 also reflected the repurchase of common stock of $243.8 million and $146.6 million, respectively. Share repurchases totaled 2,561,815 shares in 2015 and 1,396,290 shares in 2014. See Note 8 to our Consolidated Financial Statements for additional information about our stock repurchase program.

Other Matters

Pension Plans

Teledyne has a domestic qualified defined benefit pension plan covering substantially all U.S. employees hired before January 1, 2004, or approximately 16% of Teledyne's active employees. As of January 1, 2004, new U.S. hires participate in a domestic defined contribution plan. In 2016, 2015 and 2014, Teledyne's domestic pension plan was over 100% funded, thus no cash contributions were made. For the Company's domestic pension plan, the discount rate for 2017 will decrease to 4.54% from 4.91% in 2016. The Company also has several smaller domestic and foreign-based defined benefit pension plans.

Income Taxes

Our income tax expense, deferred tax assets and liabilities, and reserves for unrecognized tax benefits reflect management's best assessment of estimated current and future taxes to be paid. We are subject to income taxes in both the United States and numerous foreign jurisdictions. Significant judgments and estimates are required in determining the consolidated income tax expense.

Deferred income taxes arise from temporary differences between the tax basis of assets and liabilities and their reported amount in the financial statements, which will result in taxable or deductible amounts in the future. In evaluating our ability to recover our deferred tax assets within the jurisdiction from which they arise, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax-planning strategies, and

results of recent operations. In projecting future taxable income, we begin with historical results adjusted for the results of discontinued operations and incorporate assumptions about the amount of future state, federal and foreign pretax operating income adjusted for items that do not have tax consequences. The assumptions about future taxable income require significant judgment and are consistent with the plans and estimates we are using to manage the underlying businesses. In evaluating the objective evidence that historical results provide, we consider three years of cumulative operating income. Based on the Company's history of operating earnings, expectations of future operating earnings and potential tax planning strategies, management believes that it is possible that some portion of deferred taxes will not be realized as a future tax benefit and therefore has recorded a valuation allowance.

We file income tax returns in the United States federal jurisdiction and in various states and foreign jurisdictions. The Company has substantially concluded on all U.S. federal income tax matters for all years through 2012, California income tax matters for all years through 2011 and Canadian income tax matters for all years through 2008.

Costs and Pricing

Inflationary trends in recent years have been moderate. Current inventory costs, the increasing costs of equipment and other costs are considered in establishing sales pricing policies. The Company emphasizes cost containment in all aspects of its business.

Hedging Activities and Market Risk Disclosures

Teledyne transacts business in various foreign currencies and has international sales and expenses denominated in foreign currencies, subjecting the Company to foreign currency risk. The Company's primary objective is to protect the United States dollar value of future cash flows and minimize the volatility of reported earnings. The Company utilizes foreign currency forward contracts to reduce the volatility of cash flows primarily related to forecasted revenue and expenses denominated in Canadian dollars for our Canadian companies, including DALSA. These contracts are designated and qualify as cash flow hedges.

The effectiveness of the cash flow hedge contracts, excluding time value, is assessed prospectively and retrospectively on a monthly basis using regression analysis, as well as using other timing and probability criteria. To receive hedge accounting treatment, all hedging relationships are formally documented at the inception of the hedges and must be highly effective in offsetting changes to future cash flows on hedged transactions. The effective portion of the cash flow hedge contracts' gains or losses resulting from changes in the fair value of these hedges is initially reported, net of tax, as a component of accumulated other comprehensive income/(loss) ("AOCI") in stockholders' equity until the underlying hedged item is reflected in our consolidated statements of income, at which time the effective amount in accumulated other comprehensive income is reclassified to cost of sales in our consolidated statements of income. The Company expects to reclassify a loss of approximately $0.8 million, net of tax, over the next 12 months based on the year-end 2016 exchange rate.

In the event that the gains or losses in AOCI are deemed to be ineffective, the ineffective portion of gains or losses resulting from changes in fair value, if any, is reclassified to other income and expense. In the event that the underlying forecasted transactions do not occur, or it becomes remote that they will occur, within the defined hedge period, the gains or losses on the related cash flow hedges will be reclassified from AOCI to other income and expense. During the current reporting period, all forecasted transactions occurred and, therefore, there were no such gains or losses reclassified to other income and expense. As of January 1, 2017, Teledyne had foreign currency forward contracts designated as cash flow hedges to buy Canadian dollars and to sell U.S. dollars totaling $56.8 million and these contracts had a negative fair value of $1.1 million. These foreign currency forward contracts have maturities ranging from March 2017 to February 2018.

In addition, the Company utilizes foreign currency forward contracts to mitigate foreign exchange rate risk associated with foreign currency denominated monetary assets and liabilities, including intercompany receivables and payables. As of January 1, 2017, Teledyne had foreign currency contracts of this type in the following currency pairs (in millions):

Contracts to Buy			Contracts to Sell		
Currency	**Amount**		**Currency**	**Amount**	
Canadian Dollars	C$	32.1	U.S. Dollars	US$	24.2
Euros	€	10.4	U.S. Dollars	US$	11.1
Great Britain Pounds	£	1.4	Australian Dollars	A$	2.4
Great Britain Pounds	£	41.3	U.S. Dollars	US$	52.0
Canadian Dollars	C$	15.9	Euros	€	10.6
U.S. Dollars	US$	0.9	Japanese Yen	¥	110.0
Singapore Dollars	S$	1.8	U.S. Dollars	US$	1.3

These contracts had a fair value of $5.4 million at January 1, 2017. The gains and losses on these derivatives which are not designated as hedging instruments, are intended to, at a minimum, partially offset the transaction gains and losses recognized in earnings. All derivatives are recorded on the balance sheet at fair value. As discussed below, the accounting for gains and losses resulting from changes in fair value depends on the use of the derivative and whether it is designated and qualifies for hedge accounting. Teledyne does not use foreign currency forward contracts for speculative or trading purposes.

Notwithstanding our efforts to mitigate portions of our foreign currency exchange rate risks, there can be no assurance that our hedging activities will adequately protect us against the risks associated with foreign currency fluctuations. A hypothetical 10% appreciation of the U.S. dollar from its value at January 1, 2017, would decrease the fair value of our foreign currency forward contracts associated with our cash flow hedging activities by $5.7 million. A hypothetical 10% depreciation of the U.S. dollar from its value at January 1, 2017, would increase the fair value of our foreign currency forward contracts associated with our cash flow hedging activities by $5.7 million.

Borrowings under our credit facility are at fixed rates that vary with the term and timing of each loan under the facility. Loans under the facility typically have terms of one, two, three or six months and the interest rate for each such loan is subject to change if the loan is continued or converted following the applicable maturity date. Interest rates are also subject to change based on our debt to earnings before interest, taxes, depreciation and amortization ratio. As of January 1, 2017, we had no amounts outstanding under our $750.0 million credit facility. Any borrowings under the Company's revolving credit line are based on a fluctuating market interest rate and, consequently, the fair value of any outstanding debt should not be affected materially by changes in market interest rates.

We believe that adequate controls are in place to monitor any hedging activities. Our primary exposure to market risk relates to changes in interest rates and foreign currency exchange rates. We periodically evaluate these risks and have taken measures to mitigate these risks. We own assets and operate facilities in countries that have been politically stable.

Environmental

We are subject to various federal, state, local and international environmental laws and regulations which require that we investigate and remediate the effects of the release or disposal of materials at sites associated with past and present operations. These include sites at which Teledyne has been identified as a potentially responsible party under the Comprehensive Environmental Response, Compensation and Liability Act, commonly known as Superfund, and comparable state laws. We are currently involved in the investigation and remediation of a number of sites. Reserves for environmental investigation and remediation totaled $7.0 million at January 1, 2017, and $8.7 million at January 3, 2016. As investigation and remediation of these sites proceed and new information is received, the Company will adjust accruals to reflect new information. Based on current information, we do not believe that future environmental costs, in excess of those already accrued, will materially and adversely affect our financial condition or liquidity. See also our environmental risk factor disclosure beginning on page 25 and Notes 2 and 14 to our Notes to Consolidated Financial Statements.

Government Contracts

We perform work on a number of contracts with the U.S. Department of Defense and other agencies and departments of the U.S. Government including sub-contracts with government prime contractors. Sales under these contracts with the U.S. Government, which included contracts with the U.S. Department of Defense, were approximately 27% of total sales in 2016, 26% of total sales in 2015 and 25% of total sales in 2014. For a summary of sales to the U.S. Government by segment, see Note 12 to our Notes to Consolidated Financial Statements. Sales to the U.S. Department of Defense represented approximately 21%, 19% and 20% of total sales for 2016, 2015 and 2014, respectively.

Performance under government contracts has certain inherent risks that could have a material adverse effect on the Company's business, results of operations and financial condition. Government contracts are conditioned upon the continuing availability of Congressional appropriations, which usually occurs on a fiscal year basis even though contract performance may take more than one year. See also our government contracts risks factor disclosure beginning on page 19.

For information on accounts receivable from the U.S. Government, see Note 5 to our Notes to Consolidated Financial Statements.

Estimates and Reserves

Our discussion and analysis of financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent liabilities. On an ongoing basis, we evaluate our estimates, including those related to product returns and replacements, allowance for doubtful accounts, inventories, intangible assets, income taxes, warranty obligations, pension and other postretirement benefits, long-term contracts, environmental, workers' compensation and general liability, employee dental and medical benefits and other contingencies and litigation. We

base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances at the time, the results of which form the basis for making our judgments. Actual results may differ materially from these estimates under different assumptions or conditions. In some cases, such differences may be material. See also Critical Accounting Policies.

The following table reflects significant reserves and valuation accounts, which are estimates and based on judgments as described above, at January 1, 2017, and January 3, 2016 (in millions):

Reserves and Valuation Accounts: (a)	**2016**	**2015**
Allowance for doubtful accounts	**$ 5.2**	$ 6.3
Reduction to LIFO cost basis	**$ 13.5**	$ 15.3
Other inventory reserves	**$ 59.4**	$ 58.8
Workers' compensation and general liability reserves(b)	**$ 9.3**	$ 8.3
Warranty reserves(b)	**$ 18.4**	$ 17.1
Environmental reserves(b)	**$ 7.0**	$ 8.7
Other accrued liability reserves(b)	**$ 37.5**	$ 33.9

(a) This table should be read in conjunction with the Notes to Consolidated Financial Statements.
(b) Includes both long-term and short-term reserves.

Some of the Company's products are subject to standard warranties and the Company provides for the estimated cost of product warranties. We regularly assess the adequacy of our pre-existing warranty liabilities and adjust amounts as necessary based on a review of historic warranty experience with respect to the applicable business or products, as well as the length and actual terms of the warranties, which are typically one year. The product warranty reserve is included in current accrued liabilities and other long-term liabilities on the balance sheet.

Warranty Reserve (in millions):	**2016**	**2015**	**2014**
Balance at beginning of year	**$ 17.1**	$ 18.5	$ 17.3
Accruals for product warranties charged to expense	**7.4**	6.1	6.6
Cost of product warranty claims	**(6.7)**	(7.7)	(5.9)
Acquisitions	**0.6**	0.2	0.5
Balance at year-end	**$ 18.4**	$ 17.1	$ 18.5

Critical Accounting Policies

The preparation of our consolidated financial statements in conformity with United States generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and the notes to the financial statements. Some of those judgments can be subjective and complex, and therefore, actual results could differ materially from those estimates under different assumptions or conditions. Our critical accounting policies are those that are reflective of significant judgment, complexity and uncertainty, and may potentially result in materially different results under different assumptions and conditions. We have identified the following as critical accounting policies: revenue recognition; accounting for pension plans; accounting for business combinations, goodwill and other long-lived assets; and accounting for income taxes. For additional discussion of the application of these and other accounting policies, see Note 2 of our Notes to Consolidated Financial Statements.

Revenue Recognition

Revenue is recognized when the earnings process is substantially complete and all of the following criteria are met: 1) persuasive evidence of an arrangement exists; 2) delivery has occurred or services have been rendered; 3) our price to our customer is fixed or determinable; and 4) collectability is reasonably assured.

We determine the appropriate method by which we recognize revenue by analyzing the terms and conditions of our contracts or arrangements entered into with our customers. The majority of our revenue relates to product sales and is recognized upon shipment to the customer, at fixed or determinable prices and with a reasonable assurance of collection, passage of title to the customer and fulfillment of all significant obligations. Revenue is recognized net of estimated sales returns and other allowances. The Company does not offer substantial sales incentives and credits to customers. The remaining revenue is generally associated with long-term contracts to design, develop and manufacture highly engineered products used in commercial or defense applications. Such contracts are generally accounted for using contract accounting, percentage-of-completion ("POC") method.

The Company's standard terms of sale are FOB shipping point. For a small percentage of sales where title and risk of loss passes at destination point, and assuming all other criteria for revenue recognition are met, the Company recognizes revenue upon delivery to the customer. If any significant obligation to the customer with respect to a sales transaction remains following shipment, revenue recognition is deferred until such obligations have been fulfilled. In general, our revenue arrangements do not involve acceptance provisions based on customer specified acceptance criteria. In those circumstances when customer specified acceptance criteria exist, and if we cannot demonstrate that the system meets those specifications prior to the shipment, then revenue is deferred until customer acceptance is obtained.

We have a few contracts that require the Company to warehouse certain goods, for which revenue is recognized when all risks of loss is borne by the customer and all other criteria for revenue recognition are met.

We also have a small number of multiple elements arrangements (i.e., free product, training, installation, additional parts, etc.). If contract accounting does not apply, we allocate the contract price among the deliverables based on vendor-specific objective evidence of fair value to each element in the arrangement. If objective and reliable evidence of fair value of any element is not available, we use our best estimate of selling price for purposes of allocating the total arrangement consideration among the elements. Also, extended or non-customary warranties do not represent a significant portion of our revenue; however when our revenue arrangements include an extended or non-customary warranty provision, the revenue is deferred and recognized ratably over the extended warranty period.

For contracts that require substantial performance over a long time period (generally one or more years), revenue is recorded under the POC method. We record net revenue and an estimated profit as work on our contracts progresses. The POC method for these contracts is dependent on the nature of the contract or products provided. Depending on the contract, we may measure the extent of progress toward completion using the units-of-delivery method, cost-to-cost method or upon attainment of scheduled performance contract milestones which could be time, event or expense driven. For example, for cost-reimbursable contracts we use the cost-to-cost method to measure progress toward completion. Under the cost-to-cost method of accounting, we recognize revenue and an estimated profit as allowable costs are incurred based on the proportion that the incurred costs bear to total estimated costs. Another example, for contracts that require us to provide a substantial number of similar items, we record revenue and an estimated profit on a POC basis using units-of-delivery as the basis to measure progress toward completing the contract. Occasionally, it is appropriate to combine individual customer orders and treat them as one arrangement when the underlying agreement was reached with the customer for a single large project.

Accounting for contracts using the POC method requires management judgment relative to assessing risks, estimating contract revenue and cost, and making assumptions for schedule and technical issues. Contract revenue may include estimated amounts not contractually agreed to by the customer, including price redetermination, cost or performance incentives (such as award and incentives fees), un-priced change orders, claims and requests for equitable adjustment. The POC method requires management's judgment to make reasonably dependable cost estimates generally over a long time period. Since certain contracts extend over a long period of time, the impact of revisions in cost and revenue estimates during the progress of work may adjust the current period earnings on a cumulative catch-up basis. This method recognizes, in the current period, the cumulative effect of the changes on current and prior quarters. Additionally, if the current contract estimate indicates a loss, a provision is made for the total anticipated loss in the period that it becomes evident. Contract cost and revenue estimates for significant contracts are generally reviewed and reassessed at least quarterly.

(dollars in millions)	**2016**	**2015**	**2014**
Percent of revenue - POC Method	**30.5%**	31.2%	28.7%
Favorable changes in estimate	**$ 27.7**	$ 38.6	$ 22.9
Unfavorable changes in estimate	**(29.6)**	(35.5)	(25.9)
Net change - income/(expense)	**$ (1.9)**	$ 3.1	$ (3.0)

We do not believe that any discrete event or adjustment to an individual contract within the aggregate changes in contract estimates for 2016, 2015 or 2014 was material to the consolidated statements of income for such annual periods.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers, which provides a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and will supersede most current revenue recognition guidance. For a discussion of this new accounting standard see Note 2 of our Notes to the Consolidated Financial Statements.

Pension Plans

Teledyne has a domestic qualified defined benefit pension plan covering substantially all U.S. employees hired before January 1, 2004, or approximately 16% of Teledyne's active employees. As of January 1, 2004, new U.S. hires participate in a defined contribution plan only. The Company also has several smaller domestic and foreign-based defined benefit pension plans. At January 1, 2017, the benefit obligation for the domestic defined benefit pension plans totaled $810.9 million and the fair value of the net qualified plan assets totaled $857.1 million. At January 1, 2017, the benefit obligation for the foreign-based pension plans totaled $51.4 million and the fair value of the net plan assets totaled $42.1 million. The Company's accounting for its defined benefit pension plans requires that amounts recognized in financial statements be determined on an actuarial basis, rather than as contributions are made to the plan. In consultation with our actuaries, we determine the appropriate assumptions for use in determining the liability for future pension benefits. Net actuarial gains or losses are amortized to expense on a plan-by-plan basis when they exceed the accounting corridor. The accounting corridor is a defined range within which amortization of net gains and losses is not required and is equal to 10 percent of the greater of the market related value of assets or benefit obligations. Gains or losses outside of the corridor are subject to amortization over our average employee future service period of approximately nine years. Significant assumptions used in determining the Company's pension income or expense is the expected long-term rate of return on plan assets, participant mortality estimates, expected rates of increase in future compensation levels, employee turnover, as well as the assumed discount rate on pension obligations. The Company has assumed, based upon the types of securities the domestic qualified pension plan assets are invested in and the long-term historical returns of these investments, that the long-term expected return on the domestic qualified pension plan assets will be 8.0% in 2017 and the assumed discount rate for determining benefit obligations will be 4.54% in 2017. The Company's long-term expected return on the domestic qualified pension assets used in 2016 was 8.0% and the assumed discount rate used in 2016 was 4.91%. The actual rate of return on the domestic qualified pension plan assets was 7.09% in 2016 and a negative return of 1.1% in 2015 for its domestic qualified pension plan. If the actual rate of return on pension assets is below the expected rate of return, the Company may be required to make additional contributions to the pension trust. At January 1, 2017, the domestic qualified pension plan is over-funded and contributions are not required. The Company did not make any cash contributions to its domestic qualified pension plan since 2013 when it made a voluntary pretax cash contribution of $83.0 million, before recovery from the U.S. Government. Each year beginning with 2014, the Society of Actuaries released revised mortality tables, which updated life expectancy assumptions. In consideration of these tables, we updated the mortality assumptions used in determining our pension obligations. The net impact of these new mortality assumptions has resulted in an increase to our pension obligation and an increase in future pension expense. Our plan remains over-funded after the impact of the new mortality assumptions, as well as from changes to other relevant assumptions. At year-end 2016, the Company has a $249.6 million non-cash reduction to stockholders' equity and a long-term additional liability of $396.9 million related to its pension plans. At year-end 2015, the Company had a $232.3 million non-cash reduction to stockholders' equity and a long-term additional liability of $370.4 million related to its pension plans.

Differences in the discount rate and expected long-term rate of return on assets within the indicated range would have had the following impact on 2016 pension expense (in millions):

	0.25 Percentage Point Increase	0.25 Percentage Point Decrease
Increase (decrease) to pension expense resulting from:		
Change in discount rate	$ (1.4)	$ 1.5
Change in long-term rate of return on plan assets	$ (2.3)	$ 2.3

See Note 11 of our Notes to Consolidated Financial Statements for additional pension disclosures.

Business Combinations, Goodwill and Acquired Intangible Assets

The results for all acquisitions are included in the Company's consolidated financial statements from the date of each respective acquisition. Business acquisitions are accounted for under the acquisition method by assigning the purchase price to tangible and intangible assets acquired and liabilities assumed. Assets acquired and liabilities assumed are recorded at their fair values and the excess of the purchase price over the amounts assigned is recorded as goodwill. We determine the fair value of such assets and liabilities, generally in consultation with third-party valuation advisors. Acquired intangible assets with finite lives are amortized over their estimated useful lives. Adjustments to fair value assessments are recorded to goodwill over the purchase price allocation period.

Goodwill and acquired intangible assets with indefinite lives are not amortized. We review goodwill and acquired indefinite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. The Company also performs an annual impairment test in the fourth quarter of each year. We would test goodwill and acquired indefinite-lived intangible assets for impairment between annual tests if events occur or circumstances change that would more likely than not reduce our enterprise fair value below its book value. These events or circumstances could include a significant change in the business climate, including a significant sustained decline in

an entity's market value, legal factors, operating performance indicators, competition, sale or disposition of a significant portion of the business, or other factors. Based on an annual impairment test completed in 2016, there was no impairment to acquired intangible assets. Based on a quarterly impairment test completed in 2016, the Company recorded a $1.0 million impairment to acquired intangible assets. Based on a quarterly impairment test completed in 2015, the Company recorded a $0.5 million impairment to acquired intangible assets. No impairment of goodwill was indicated in 2016 or 2015, based on the annual impairment test completed in the fourth quarter of each year.

For goodwill impairment testing, the Company estimates the fair value of the reporting units, using a discounted cash flow model based on our best estimate of amounts and timing of future revenues and cash flows and our most recent business and strategic plans, and compares the estimated fair value to the carrying value of the reporting unit, including goodwill. The discounted cash flow model requires judgmental assumptions about projected revenue growth, future operating margins, discount rates and terminal values over a multi-year period. There are inherent uncertainties related to these assumptions and management's judgment in applying them to the analysis of goodwill impairment. While the Company believes it has made reasonable estimates and assumptions to calculate the fair value of its reporting units, it is possible a material change could occur. If actual results are not consistent with management's estimates and assumptions, goodwill may be overstated and a charge would need to be taken against net earnings.

As of January 1, 2017, the Company had 17 reporting units for goodwill impairment testing. The carrying value of goodwill included in the Company's individual reporting units ranges from $1.0 million to $422.5 million. The Company's analysis in 2016 indicated that in all instances, the fair value of the Company's reporting units exceeded their carrying values and consequently did not result in an impairment charge. The excess of the estimated fair value over the carrying value (expressed as a percentage of carrying value of the respective reporting unit) for each of the Company's reporting units as of the fourth quarter of 2016, the annual testing date, ranged from approximately 19% to 4873%.

Changes in these projections could affect the estimated fair value of certain of the Company's reporting units and could result in a goodwill impairment charge in a future period. In order to evaluate the sensitivity of the fair value calculations used in the goodwill impairment test, the Company applied a hypothetical 10% decrease to the fair values of each reporting unit and compared those values to the reporting unit carrying values. Based on this sensitivity analysis, the Company did not identify any goodwill impairment. Due to the many variables inherent in the estimation of a reporting unit's fair value and the relative size of our recorded goodwill, differences in assumptions may have a material effect on the results of our impairment analysis.

The impairment test for indefinite-lived intangibles other than goodwill (primarily trademarks and trade names) consists of a comparison of the fair value of the indefinite-lived intangible asset to the carrying value of the asset as of the impairment testing date. The Company estimates the fair value of its indefinite-lived intangibles using a discounted cash flow model based on our best estimate of amounts and timing of future revenues from our most recent business and strategic plans, and compares the estimated fair value to the carrying value of the asset. Without exception, the estimated fair values exceed the carrying value for each of the Company's indefinite-lived intangible assets as of the fourth quarter of 2016, the annual testing date.

Income Taxes

Income tax expense and deferred tax assets and liabilities reflect management's assessment of actual future taxes to be paid on items reflected in the financial statements. Significant judgment is required in evaluating our tax positions and determining our provision for income taxes. Uncertainty exists regarding tax positions taken in previously filed tax returns still under examination and positions expected to be taken in the current year and future returns. Deferred tax assets and liabilities arise due to differences between the consolidated financial statement carrying amounts of existing assets and liabilities and their respective tax bases and tax carryforwards. Although we believe our income tax expense and deferred tax assets and liabilities are reasonable, no assurance can be given that the final tax outcome will not be different from that which is reflected in our historical income tax provisions and accruals. To the extent that the final tax outcome is different than the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of uncertain tax benefits that are considered appropriate, as well as the related net interest.

Significant judgment is required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, we consider all available evidence including past operating results, estimates of future taxable income and the feasibility of tax planning strategies. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

We record uncertain tax benefits on the basis of a two-step process whereby (1) we determine whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the positions and (2) for those tax positions that meet the "more-likely-than-not" recognition threshold, we recognize the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority.

An increase of 100 basis point increase in our nominal tax rate would have resulted in additional income tax provision for the fiscal year ended January 1, 2017, of $2.4 million. For a description of the Company's tax accounting policies, refer to Note 2 and Note 10 of our Notes to the Consolidated Financial Statements.

Recent Accounting Standards

For a discussion of recent accounting standards see Note 2 of our Notes to the Consolidated Financial Statements.

Safe Harbor Cautionary Statement Regarding Forward-Looking Information

This Management's Discussion and Analysis of Financial Condition and Results of Operation contains forward-looking statements, as defined in the Private Securities Litigation Reform Act of 1995, directly and indirectly relating to earnings, growth opportunities, acquisitions and divestitures, product sales, capital expenditures, pension matters, stock option compensation expense, the credit facility, interest expense, severance and relocation costs, environmental remediation cost, stock repurchases, taxes, exchange rate fluctuations and strategic plans. All statements made in this Management's Discussion and Analysis of Financial Condition and Results of Operation that are not historical in nature should be considered forward-looking. Actual results could differ materially from these forward-looking statements.

Many factors could change the anticipated results, including: disruptions in the global economy; changes in demand for products sold to the defense electronics, instrumentation, digital imaging, energy exploration and production, commercial aviation, semiconductor and communications markets; funding, continuation and award of government programs; and cuts to defense spending resulting from existing and future deficit reduction measures; risks associated with our pending acquisition of e2v, including the failure to satisfy closing conditions and the failure to successfully integrate the business; impacts from the United Kingdom's decision to exit the European Union; uncertainties related to the policies of the new U.S. Presidential administration; and threats to the security of our confidential and proprietary information, including cyber security threats. Continued lower oil and natural gas prices, as well as instability in the Middle East or other oil producing regions, and new regulations or restrictions relating to energy production, including with respect to hydraulic fracturing could further negatively affect our businesses that supply the oil and gas industry. Increasing fuel costs could negatively affect the markets of our commercial aviation businesses. In addition, financial market fluctuations affect the value of our pension assets. Changes in the policies of U.S. and foreign governments could result, over time, in reductions or realignment in defense or other government spending and further changes in programs in which the Company participates.

While Teledyne's growth strategy includes possible acquisitions, including the pending e2v transaction, we cannot provide any assurance as to when, if or on what terms any acquisitions will be made. Acquisitions involve various inherent risks, such as, among others, our ability to integrate acquired businesses, retain customers and achieve identified financial and operating synergies. There are additional risks associated with acquiring, owning and operating businesses outside of the United States, including those arising from U.S. and foreign government policy changes or actions and exchange rate fluctuations.

We continue to take action to assure compliance with the internal controls, disclosure controls and other requirements of the Sarbanes-Oxley Act of 2002. While we believe our control systems are effective, there are inherent limitations in all control systems, and misstatements due to error or fraud may occur and may not be detected.

Additional information concerning factors that could cause actual results to differ materially from those projected in the forward-looking statements is contained beginning on page 13 of this Form 10-K under the caption "Risk Factors; Cautionary Statement as to Forward-Looking Statements." Forward-looking statements are generally accompanied by words such as "estimate", "project", "predict", "believes" or "expect", that convey the uncertainty of future events or outcomes. We assume no obligation to publicly update or revise any forward-looking statements, whether as a result of new information or otherwise.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

The information required by this item is included in this Report on page 50 under the caption "Other Matters - Hedging Activities; Market Risk Disclosures" of "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operation."

Item 8. Financial Statements and Supplementary Data

The information required by this item is included in this Report on pages 60 through 102. See the "Index to Financial Statements and Related Information" on page 59.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Disclosure Controls

Teledyne's disclosure controls and procedures are designed to ensure that information required to be disclosed in reports that it files or submits, under the Securities Exchange Act of 1934, was recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission and to provide reasonable assurance that information required to be disclosed by us in such reports is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure. The Company's Chairman, President and Chief Executive Officer and Senior Vice President and Chief Financial Officer, with the participation and assistance of other members of management, have evaluated the effectiveness, as of January 1, 2017, of the Company's "disclosure controls and procedures," as that term is defined in Rule 13a-15(e) under the Securities and Exchange Act of 1934, as amended ("the Exchange Act"). Based upon that evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that the disclosure controls and procedures as of January 1, 2017, are effective.

Internal Controls

See Management Statement on page 60 for management's annual report on internal control over financial reporting. See Report of Independent Registered Public Accounting Firm on page 61 for Deloitte & Touche LLP's attestation report on management's assessment of internal control over financial reporting.

There was no change in the Company's "internal control over financial reporting" (as such term is defined in Rule 13a-15 (f) under the Exchange Act) that occurred during the quarter ended January 1, 2017, that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. There also were no material weaknesses identified for which corrective action needed to be taken.

Sarbanes-Oxley Disclosure Committee

The Company's Sarbanes-Oxley Disclosure Committee includes the following members:

Carl W. Adams, Vice President, Business Risk Assurance
Cynthia Belak, Vice President and Controller
Stephen F. Blackwood, Vice President and Treasurer
Melanie S. Cibik, Senior Vice President, General Counsel, Chief Compliance Officer and Secretary
Michael C. Lee, Director, Global Income Tax Accounting
Brian A. Levan, Senior Director of Financial Reporting and Assistant Controller
Susan L. Main, Senior Vice President and Chief Financial Officer
S. Paul Sassalos, Associate General Counsel and Assistant Secretary
Caleb B. Standafer, Senior Director Taxation and Associate Treasurer
Jason VanWees, Senior Vice President, Strategy and Mergers & Acquisitions
Tyler Vernon, Senior Manager, SEC/GAAP Compliance & External Reporting

Among its tasks, the Sarbanes-Oxley Disclosure Committee discusses and reviews disclosure issues to help us fulfill our disclosure obligations on a timely basis in accordance with SEC rules and regulations and is intended to be used as an additional resource for employees to raise questions regarding accounting, auditing, internal controls and disclosure matters. Our toll-free Ethics Help Line (1-877-666-6968) continues to be an alternative means to communicate concerns to the Company's management.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

In addition to the information set forth under the caption "Executive Management" beginning on page 10 in Part I of this Report, the information required by this item is set forth in the 2017 Proxy Statement under the captions "Item 1 on Proxy Card - Election of Directors," "Board Composition and Practices," "Corporate Governance," "Committees of Our Board of Directors - Audit Committee" and "Report of the Audit Committee" and "Stock Ownership - Sections 16(a) Beneficial Ownership Reporting Compliance." This information is incorporated herein by reference.

Item 11. Executive Compensation.

The information required by this item is set forth in the 2017 Proxy Statement under the captions "Executive and Director Compensation" "Compensation Committee Interlocks and Insider Participation" and "Personnel and Compensation Committee Report." This information is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item is set forth in the 2017 Proxy Statement under the caption "Stock Ownership Information" and under Item 2 "Approval of Amended and Restated Teledyne Technologies Incorporated 2014 Incentive Award Plan" and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item is set forth in the 2017 Proxy Statement under the captions "Corporate Governance" and "Certain Transactions" and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

The information required by this item is set forth in the 2017 Proxy Statement under the captions "Fees Billed by Independent Registered Public Accounting Firm" and "Audit Committee Pre-Approval Policies" under "Item 3 on Proxy Card - Ratification of Appointment of Independent Registered Public Accounting Firm" and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Exhibits and Financial Statement Schedules:

(1) Financial Statements

See the "Index to Financial Statements and Related Information" on page 60 of this Report, which is incorporated herein by reference.

(2) Financial Statement Schedules

See Schedule II captioned "Valuation and Qualifying Accounts" on page 102 of this Report, which is incorporated herein by reference.

(3) Exhibits

A list of exhibits filed with this Form 10-K or incorporated by reference is found in the Exhibit Index immediately following the certifications of this Report and incorporated herein by reference.

(b) Exhibits:

See Item 15(a)(3) above.

(c) Financial Schedules:

See Item 15(a)(2) above.

INDEX TO FINANCIAL STATEMENTS AND RELATED INFORMATION

MANAGEMENT STATEMENT

RESPONSIBILITY FOR PREPARATION OF THE FINANCIAL STATEMENTS AND ESTABLISHING AND MAINTAINING ADEQUATE INTERNAL CONTROL OVER FINANCIAL REPORTING

We are responsible for the preparation of the financial statements included in this Annual Report. The financial statements were prepared in accordance with accounting principles generally accepted in the United States of America and include amounts that are based on the best estimates and judgments of management. The other financial information contained in this Annual Report is consistent with the financial statements.

Our internal control system is designed to provide reasonable assurance concerning the reliability of the financial data used in the preparation of Teledyne financial statements, as well as to safeguard the Company's assets from unauthorized use or disposition.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement presentation.

REPORT OF MANAGEMENT ON TELEDYNE TECHNOLOGIES INCORPORATED'S INTERNAL CONTROL OVER FINANCIAL REPORTING

We are also responsible for establishing and maintaining adequate internal control over financial reporting. We conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of January 1, 2017. In making this evaluation, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria) in Internal Control - Integrated Framework. Our evaluation included reviewing the documentation of our controls, evaluating the design effectiveness of our controls and testing their operating effectiveness. Our evaluation did not include assessing the effectiveness of internal control over financial reporting for the CARIS, Quantum Data, Frontline, IN USA and Hanson Research acquisitions in 2016. These acquisitions, which are included in the 2016 consolidated financial statements of the Company, constituted less than 4% of total assets and less than 2% of both total revenues and net income of the Company as of and for the year ended January 1, 2017. We did not assess the effectiveness of internal control over financial reporting at these newly acquired entities due to the insufficient time between the date acquired and year-end and the complexity associated with assessing internal controls during integration efforts making the process impractical. Based on this evaluation we believe that, as of January 1, 2017, the Company's internal controls over financial reporting were effective.

Deloitte and Touche LLP, our independent registered public accounting firm, has issued its report on the effectiveness of Teledyne's internal control over financial reporting. Their report appears on page 61 of this Annual Report.

Date: March 2, 2017

/s/ ROBERT MEHRABIAN
Robert Mehrabian
Chairman, President and Chief Executive Officer

Date: March 2, 2017

/s/ SUSAN L. MAIN
Susan L. Main
Senior Vice President and Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Teledyne Technologies Incorporated
Thousand Oaks, California

We have audited the internal control over financial reporting of Teledyne Technologies Incorporated and subsidiaries (the "Company") as of January 1, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. As described in the Report of Management on Teledyne Technologies Incorporated's Internal Control Over Financial Reporting, management excluded from its assessment the internal control over financial reporting for CARIS, Inc., Frontline Test Equipment, Inc., Quantum Data, Inc., IN USA, Inc., and Hanson Research Corporation ("the 2016 acquisitions"), which were acquired in April, May, November, and December, respectively, and whose financial statements constitute less than 4% of total assets and less than 2% of both total revenues and net income of the consolidated financial statement amounts as of and for the year ended January 1, 2017. Accordingly, our audit did not include the internal control over financial reporting for the 2016 acquisitions. The Company'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 Report of Management on Teledyne Technologies Incorporated's 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 by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel 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 the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of January 1, 2017, based on the criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements and financial statement schedule as of and for the year ended January 1, 2017 of the Company and our report dated March 2, 2017 expressed an unqualified opinion on those financial statements and financial statement schedule.

/s/ Deloitte & Touche LLP
Los Angeles, California
March 2, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Teledyne Technologies Incorporated
Thousand Oaks, California

We have audited the accompanying consolidated balance sheets of Teledyne Technologies Incorporated and subsidiaries (the "Company") as of January 1, 2017 and January 3, 2016, and the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for the years ended January 1, 2017 and January 3, 2016. Our audits also included the financial statement schedule as of and for the years ended January 1, 2017 and January 3, 2016 listed in the Index at Item 15. These consolidated financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on the consolidated financial statements and financial statement 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, such consolidated financial statements as of and for the years ended January 1, 2017 and January 3, 2016, present fairly, in all material respects, the financial position of Teledyne Technologies Incorporated and subsidiaries as of January 1, 2017 and January 3, 2016, and the results of their operations and their cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule as of and for the years ended January 1, 2017 and January 3, 2016, when considered in relation to the basic consolidated financial statements taken as a whole, present fairly, in all material respects, the information set forth therein.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of January 1, 2017, based on the criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 2, 2017 expressed an unqualified opinion on the Company's internal control over financial reporting.

/s/ Deloitte & Touche LLP
Los Angeles, California
March 2, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Teledyne Technologies Incorporated

We have audited the accompanying consolidated statements of income, comprehensive income, stockholders' equity, and cash flows of Teledyne Technologies Incorporated for the period ended December 28, 2014. Our audit also included the financial statement schedule listed in the index at Item 15(a)(2) for the year ended December 28, 2014. 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 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 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 audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated results of operations and cash flows of Teledyne Technologies Incorporated for the year ended December 28, 2014, 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 for the year ended December 28, 2014.

/s/ Ernst & Young LLP
Los Angeles, California
February 26, 2015

TELEDYNE TECHNOLOGIES INCORPORATED
CONSOLIDATED STATEMENTS OF INCOME
(In millions, except per-share amounts)

	2016	2015	2014
Net Sales	**$ 2,149.9**	$ 2,298.1	$ 2,394.0
Costs and expenses			
Cost of sales	**1,318.0**	1,427.8	1,487.1
Selling, general and administrative expenses	**578.1**	588.6	612.4
Total costs and expenses	**1,896.1**	2,016.4	2,099.5
Operating income	**253.8**	281.7	294.5
Interest and debt expense, net	**(23.2)**	(23.9)	(19.0)
Other income, net	**10.7**	0.4	6.6
Income before income taxes	**241.3**	258.2	282.1
Provision for income taxes	**50.4**	62.7	66.5
Net income	**190.9**	195.5	215.6
Noncontrolling interest	**—**	0.3	2.1
Net income attributable to Teledyne	**$ 190.9**	$ 195.8	$ 217.7
Basic earnings per common share	**$ 5.52**	$ 5.55	$ 5.87
Weighted average common shares outstanding	**34.6**	35.3	37.1
Diluted earnings per common share	**$ 5.37**	$ 5.44	$ 5.75
Weighted average diluted common shares outstanding	**35.5**	36.0	37.9

The accompanying notes are an integral part of these financial statements.

TELEDYNE TECHNOLOGIES INCORPORATED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In millions)

	2016	2015	2014
Net income	**$ 190.9**	$ 195.5	$ 215.6
Other comprehensive income (loss):			
Foreign exchange translation adjustment	**(24.6)**	(83.6)	(58.2)
Hedge activity, net of tax	**3.9**	(1.4)	(2.0)
Pension and postretirement benefit adjustments, net of tax	**(17.3)**	(5.0)	(97.5)
Other comprehensive loss(a)	**(38.0)**	(90.0)	(157.7)
Comprehensive income	**152.9**	105.5	57.9
Noncontrolling interest	**—**	0.3	2.1
Comprehensive income attributable to Teledyne, net of tax	**$ 152.9**	$ 105.8	$ 60.0

(a) Net of income tax benefit of $8.0 million in 2016, income tax benefit of $3.5 million for 2015 and income tax expense of $22.6 million for 2014.

The accompanying notes are an integral part of these financial statements.

TELEDYNE TECHNOLOGIES INCORPORATED
CONSOLIDATED BALANCE SHEETS
(In millions, except share amounts)

	2016	2015
Assets		
Current Assets		
Cash	**$ 98.6**	$ 85.1
Accounts receivable, net	**383.7**	373.0
Inventories, net	**314.2**	309.2
Prepaid expenses and other current assets	**49.7**	59.5
Total current assets	**846.2**	826.8
Property, plant and equipment, net	**340.8**	321.3
Goodwill, net	**1,193.5**	1,140.2
Acquired intangibles, net	**234.6**	243.3
Prepaid pension assets	**88.5**	111.0
Other assets, net	**70.8**	74.5
Total Assets	**$ 2,774.4**	$ 2,717.1
Liabilities and Stockholders' Equity		
Current Liabilities		
Accounts payable	**$ 138.8**	$ 136.5
Accrued liabilities	**261.0**	238.0
Current portion of long-term debt, capital leases and other debt	**102.0**	19.1
Total current liabilities	**501.8**	393.6
Long-term debt and capital leases	**515.8**	761.5
Other long-term liabilities	**202.4**	217.9
Total Liabilities	**1,220.0**	1,373.0
Commitments and contingencies		
Stockholders' Equity		
Preferred stock, $0.01 par value; outstanding shares-none	**—**	—
Common stock, $0.01 par value; authorized 125 million shares; Issued shares: 37,697,865 at January 1, 2017, and 37,697,865 at January 3, 2016; outstanding shares: 35,110,762 at January 1, 2017, and 34,514,599 at January 3, 2016	**0.4**	0.4
Additional paid-in capital	**335.7**	345.3
Retained earnings	**1,912.4**	1,721.5
Treasury stock, 2,587,103 at January 1, 2017 and 3,183,266 at January 3, 2016	**(242.9)**	(309.9)
Accumulated other comprehensive loss	**(451.2)**	(413.2)
Total Stockholders' Equity	**1,554.4**	1,344.1
Total Liabilities and Stockholders' Equity	**$ 2,774.4**	$ 2,717.1

The accompanying notes are an integral part of these financial statements.

TELEDYNE TECHNOLOGIES INCORPORATED
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions)

	Common Stock	Additional Paid-in Capital	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Teledyne Technologies Incorporated Stockholders' Equity	Noncontrolling Interest	Total Equity
Balance, December 29, 2013	$ 0.4	$ 328.8	$ —	$ 1,308.0	$ (165.5)	$ 1,471.7	$ 47.0	$ 1,518.7
Net income (loss)	—	—	—	217.7	—	217.7	(2.1)	215.6
Other comprehensive loss, net of tax	—	—	—	—	(157.7)	(157.7)	—	(157.7)
Foreign currency translation adjustment - noncontrolling interest	—	—	—	—	—	—	(3.7)	(3.7)
Treasury stock purchases	—	(20.0)	(102.1)	—	—	(122.1)	—	(122.1)
Stock option compensation expense	—	14.0	—	—	—	14.0	—	14.0
Exercise of stock options and other	—	3.7	—	—	—	3.7	—	3.7
Balance, December 28, 2014	0.4	326.5	(102.1)	1,525.7	(323.2)	1,427.3	41.2	1,468.5
Net income (loss)	—	—	—	195.8	—	195.8	(0.3)	195.5
Other comprehensive loss, net of tax	—	—	—	—	(90.0)	(90.0)	—	(90.0)
Purchase of noncontrolling interest	—	17.6	—	—	—	17.6	(39.6)	(22.0)
Foreign currency translation adjustment - noncontrolling interest	—	—	—	—	—	—	(1.3)	(1.3)
Treasury stock purchases	—	(36.0)	(207.8)	—	—	(243.8)	—	(243.8)
Stock-based compensation	—	13.9	—	—	—	13.9	—	13.9
Exercise of stock options and other	—	23.3	—	—	—	23.3	—	23.3
Balance, January 3, 2016	**0.4**	**345.3**	**(309.9)**	**1,721.5**	**(413.2)**	**1,344.1**	**$ —**	**1,344.1**
Net income	**—**	**—**	**—**	**190.9**	**—**	**190.9**	**—**	**190.9**
Other comprehensive loss, net of tax	**—**	**—**	**—**	**—**	**(38.0)**	**(38.0)**	**—**	**(38.0)**
Treasury stock issued	**—**	**(67.0)**	**67.0**	**—**	**—**	**—**	**—**	**—**
Stock-based compensation	**—**	**21.3**	**—**	**—**	**—**	**21.3**	**—**	**21.3**
Exercise of stock options and other	**—**	**36.1**	**—**	**—**	**—**	**36.1**	**—**	**36.1**
Balance, January 1, 2017	**$ 0.4**	**$ 335.7**	**$ (242.9)**	**$ 1,912.4**	**$ (451.2)**	**$ 1,554.4**	**$ —**	**$ 1,554.4**

The accompanying notes are an integral part of these financial statements.

TELEDYNE TECHNOLOGIES INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	2016	2015	2014
Operating Activities			
Net income	**$ 190.9**	$ 195.5	$ 215.6
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	**87.3**	90.3	94.3
Deferred income taxes	**(7.9)**	(7.9)	(57.0)
Stock option expense	**11.6**	12.2	14.0
Change in fair value of derivative instruments	**5.5**	—	—
Noncontrolling interest	**—**	(0.3)	(2.1)
Gain on sale of facility	**(17.9)**	—	—
Excess tax benefits from stock options exercised	**—**	(4.3)	(6.2)
Changes in operating assets and liabilities, excluding the effect of businesses acquired:			
Accounts receivable	**(11.4)**	21.9	(18.9)
Inventories	**(9.1)**	(6.4)	(5.7)
Prepaid expenses and other assets	**(1.7)**	(1.3)	(2.8)
Accounts payable	**2.1**	(26.8)	13.4
Accrued liabilities	**26.8**	(41.1)	8.6
Income taxes payable, net	**23.8**	(21.3)	(7.5)
Long-term assets	**1.0**	3.7	(1.5)
Other long-term liabilities	**11.4**	(5.0)	4.4
Pension benefits	**4.0**	3.3	44.4
Postretirement benefits	**(0.9)**	(2.0)	1.2
Other operating, net	**1.5**	(0.3)	(6.3)
Net cash provided by operating activities	**317.0**	210.2	287.9
Investing Activities			
Purchases of property, plant and equipment	**(87.6)**	(47.0)	(43.5)
Purchase of businesses and other investments, net of cash acquired	**(93.4)**	(66.7)	(195.8)
Proceeds from the sale of businesses and disposal of fixed assets	**30.0**	3.8	0.6
Sales proceeds transferred to escrow as restricted cash	**(19.5)**	—	—
Sales proceeds transferred from escrow to cash	**19.5**	—	—
Net cash used in investing activities	**(151.0)**	(109.9)	(238.7)
Financing Activities			
Net proceeds (payments) on credit facility	**(147.0)**	45.5	—
Proceeds from other debt	**6.1**	9.7	29.5
Payments on other debt	**(22.2)**	(102.8)	—
Proceeds from issuance of senior notes	**—**	125.0	125.0
Purchase of treasury stock	**—**	(243.8)	(146.6)
Proceeds from stock options exercised	**36.1**	19.0	18.3
Excess tax benefits from stock options exercised	**—**	4.3	6.2
Issuance of cash flow hedges	**—**	(0.5)	(2.0)
Purchase of option contract	**(11.6)**	—	—
Other financing	**(6.4)**	(1.4)	—
Net cash provided (used) by financing activities	**(145.0)**	(145.0)	30.4
Effect of exchange rate changes on cash	**(7.5)**	(11.6)	(4.2)
Increase (decrease) in cash	**13.5**	(56.3)	75.4
Cash—beginning of period	**85.1**	141.4	66.0
Cash—end of period	**$ 98.6**	$ 85.1	$ 141.4

The accompanying notes are an integral part of these financial statements.

Note 1. Description of Business

Teledyne Technologies Incorporated ("Teledyne" or the "Company") became an independent, public company effective November 29, 1999. Teledyne provides enabling technologies for industrial growth markets that require advanced technology and high reliability. These markets include deepwater oil and gas exploration and production, oceanographic research, air and water quality environmental monitoring, electronics design and development, factory automation and medical imaging. The products include monitoring and control instrumentation for marine and environmental applications, harsh environment interconnects, electronic test and measurement equipment, digital imaging sensors and cameras, aircraft information management systems, and defense electronics and satellite communication subsystems. Teledyne also supplies engineered systems for defense, space, environmental and energy applications. Teledyne differentiates itself from many of its direct competitors by having a customer and company sponsored applied research center that augments our product development expertise.

Teledyne consists of the Instrumentation segment with principal operations in the United States, the United Kingdom and Denmark; the Digital Imaging segment with principal operations in the United States, Canada and the Netherlands: the Aerospace and Defense Electronics segment with principal operations in the United States and the United Kingdom; and the Engineered Systems segment with principal operations in the United States and the United Kingdom.

Note 2. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of Teledyne and all wholly-owned and majority-owned domestic and foreign subsidiaries. Intercompany accounts and transactions have been eliminated.

Fiscal Year

The Company operates on a 52- or 53-week fiscal year convention ending on the Sunday nearest to December 31. Fiscal year 2016 was a 52-week fiscal year and ended on January 1, 2017. Fiscal year 2015 was a 53-week fiscal year and ended on January 3, 2016. Fiscal year 2014 was a 52-week fiscal year and ended on December 28, 2014. References to the years 2016, 2015 and 2014 are intended to refer to the respective fiscal year unless otherwise noted.

Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent liabilities. On an ongoing basis, the Company evaluates its estimates, including those related to product returns and replacements, allowance for doubtful accounts, inventories, goodwill, intangible assets, asset valuations, income taxes, warranty obligations, pension and other postretirement benefits, long-term contracts, environmental, workers' compensation and general liability, employee benefits and other contingencies and litigation. The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances at the time, the results of which form the basis for making its judgments. Actual results may differ materially from these estimates under different assumptions or conditions. Management believes that the estimates are reasonable.

Accumulated Other Comprehensive Income/(Loss)

The following table summarizes the changes in accumulated balances of other comprehensive income/(loss) ("AOCI") for the fiscal years ended January 1, 2017, and January 3, 2016 (in millions):

	Foreign Currency Translation	Cash Flow Hedges and other	Pension and Postretirement Benefits	Total
Balances as of December 28, 2014	$ (90.6)	$ (5.3)	$ (227.3)	$ (323.2)
Other comprehensive loss before reclassifications	(83.6)	(8.2)	—	(91.8)
Amounts reclassified from AOCI	—	6.8	(5.0)	1.8
Net other comprehensive loss	(83.6)	(1.4)	(5.0)	(90.0)
Balance as of January 3, 2016	(174.2)	(6.7)	(232.3)	(413.2)
Other comprehensive income (loss) before reclassifications	(24.6)	1.8	—	(22.8)
Amounts reclassified from AOCI	—	2.1	(17.3)	(15.2)
Net other comprehensive income (loss)	(24.6)	3.9	(17.3)	(38.0)
Balance as of January 1, 2017	$ (198.8)	$ (2.8)	$ (249.6)	$ (451.2)

The reclassification out of AOCI for the fiscal years ended January 1, 2017, and January 3, 2016, are as follows (in millions):

	January 1, 2017	January 3, 2016	
	Amount reclassified from AOCI	Amount reclassified from AOCI	Financial Statement Presentation
Loss on cash hedges:			
Loss recognized in income on derivatives	$ 2.8	$ 9.1	Cost of sales
Income tax impact	(0.7)	(2.3)	Income tax benefit
Total	$ 2.1	$ 6.8	
Amortization of defined benefit pension and postretirement plan items:			
Amortization of prior service cost	$ (6.1)	$ (6.0)	See Note 11
Amortization of net actuarial loss	27.2	34.0	See Note 11
Pension adjustments	(47.7)	(36.0)	See Note 11
Total before tax	(26.6)	(8.0)	
Tax effect	9.3	3.0	
Net of tax	$ (17.3)	$ (5.0)	

Revenue Recognition

Revenue is recognized when the earnings process is substantially complete and all of the following criteria are met: 1) persuasive evidence of an arrangement exists; 2) delivery has occurred or services have been rendered; 3) our price to our customer is fixed or determinable; and 4) collectability is reasonably assured.

We determine the appropriate method by which we recognize revenue by analyzing the terms and conditions of our contracts or arrangements entered into with our customers. The majority of our revenue relates to product sales and is recognized upon shipment to the customer, at fixed or determinable prices and with a reasonable assurance of collection, passage of title to the customer and fulfillment of all significant obligations. Revenue is recognized net of estimated sales returns and other allowances. The Company does not offer substantial sales incentives and credits to customers. The remaining revenue is generally associated with long-term contracts to design, develop and manufacture highly engineered products used in commercial or defense applications. Such contracts are generally accounted for using contract accounting, percentage-of-completion ("POC") method.

The Company's standard terms of sale are FOB shipping point. For a small percentage of sales where title and risk of loss passes at destination point, and assuming all other criteria for revenue recognition are met, the Company recognizes revenue upon delivery to the customer. If any significant obligation to the customer with respect to a sales transaction remains following shipment, revenue recognition is deferred until such obligations have been fulfilled. In general, our revenue arrangements do not involve acceptance provisions based on customer specified acceptance criteria. In those circumstances when customer specified acceptance criteria exist, and if we cannot demonstrate that the product meets those specifications prior to the shipment, then revenue is deferred until customer acceptance is obtained.

We have a few contracts that require the Company to warehouse certain goods, for which revenue is recognized when all risks of loss are borne by the customer and all other criteria for revenue recognition are met.

We also have a small number of multiple elements arrangements (i.e., free product, training, installation, additional parts, etc.). If contract accounting does not apply, we allocate the contract price among the deliverables based on vendor-specific objective evidence of fair value to each element in the arrangement. If objective and reliable evidence of fair value of any element is not available, we use our best estimate of selling price for purposes of allocating the total arrangement consideration among the elements. Also, extended or non-customary warranties do not represent a significant portion of our revenue; however when our revenue arrangements include an extended or non-customary warranty provision, the revenue is deferred and recognized ratably over the extended warranty period.

For contracts that require substantial performance over a long time period (generally one or more years), revenue is recorded under the POC method. We record net revenue and an estimated profit as work on our contracts progresses. The POC method for these contracts is dependent on the nature of the contract or products provided. Depending on the contract, we may measure the extent of progress toward completion using the units-of-delivery method, cost-to-cost method or upon attainment of scheduled performance contract milestones which could be time, event or expense driven. For example, for cost-reimbursable contracts we use the cost-to-cost method to measure progress toward completion. Under the cost-to-cost method of accounting, we recognize revenue and an estimated profit as allowable costs are incurred based on the proportion that the incurred costs bear to total estimated costs. Another example, for contracts that require us to provide a substantial number of similar items, we record revenue and an estimated profit on a POC basis using units-of-delivery as the basis to measure progress toward completing the contract. Occasionally, it is appropriate to combine individual customer orders and treat them as one arrangement when the underlying agreement was reached with the customer for a single large project.

Accounting for contracts using the POC method requires management judgment relative to assessing risks, estimating contract revenue and cost, and making assumptions for schedule and technical issues. Contract revenue may include estimated amounts not contractually agreed to by the customer, including price redetermination, cost or performance incentives (such as award and incentives fees), un-priced change orders, claims and requests for equitable adjustment. The POC method requires management's judgment to make reasonably dependable cost estimates generally over a long time period. Since certain contracts extend over a long period of time, the impact of revisions in cost and revenue estimates during the progress of work may adjust the current period earnings on a cumulative catch-up basis. This method recognizes, in the current period, the cumulative effect of the changes on current and prior quarters. Additionally, if the current contract estimate indicates a loss, a provision is made for the total anticipated loss in the period that it becomes evident. Contract cost and revenue estimates for significant contracts are generally reviewed and reassessed quarterly.

(dollars in millions)	**2016**	**2015**	**2014**
Percent of revenue - POC Method	**30.5%**	31.2%	28.7%
Favorable changes in estimate	**$ 27.7**	$ 38.6	$ 22.9
Unfavorable changes in estimate	**(29.6)**	(35.5)	(25.9)
Net change - income/(expense)	**$ (1.9)**	$ 3.1	$ (3.0)

We do not believe that any discrete event or adjustment to an individual contract within the aggregate changes in contract estimates for 2016, 2015 or 2014 was material to the consolidated statements of income for such annual periods.

Shipping and Handling

Shipping and handling fees reimbursed by customers are classified as revenue while shipping and handling costs incurred by Teledyne are classified as cost of sales in the accompanying consolidated statements of income.

Product Warranty Costs

Some of the Company's products are subject to standard warranties and the Company reserves for the estimated cost of product warranties on a product-specific basis. Facts and circumstances related to a product warranty matter and cost estimates to return, repair and/or replace the product are considered when establishing a product warranty reserve. The adequacy of the preexisting warranty liabilities is assessed regularly and the reserve is adjusted as necessary based on a review of historic warranty experience with respect to the applicable business or products, as well as the length and actual terms of the warranties, which are typically one year. The product warranty reserve is included in current accrued liabilities and long-term liabilities on the balance sheet.

Warranty Reserve (in millions):	**2016**	**2015**	**2014**
Balance at beginning of year	**$ 17.1**	$ 18.5	$ 17.3
Accruals for product warranties charged to expense	**7.4**	6.1	6.6
Cost of product warranty claims	**(6.7)**	(7.7)	(5.9)
Acquisitions	**0.6**	0.2	0.5
Balance at end of period	**$ 18.4**	$ 17.1	$ 18.5

Research and Development

Selling, general and administrative expenses include Company-funded research and development and bid and proposal costs which are expensed as incurred and were $167.7 million in 2016, $163.7 million in 2015 and $166.9 million in 2014.

Income Taxes

We compute the provision for income taxes using the asset and liability method, under which deferred tax assets and liabilities are recognized for temporary differences between the tax basis of assets and liabilities and their reported amount in the financial statements, which will result in taxable or deductible amounts in the future. In evaluating our ability to recover our deferred tax assets within the jurisdiction from which they arise, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax-planning strategies, and results of recent operations. In projecting future taxable income, we begin with historical results adjusted for the results of discontinued operations and incorporate assumptions about the amount of future state, federal and foreign pretax operating income adjusted for items that do not have tax consequences. The assumptions about future taxable income require significant judgment and are consistent with the plans and estimates we are using to manage the underlying businesses. In evaluating the objective evidence that historical results provide, we consider three years of cumulative operating income. A valuation allowance is recorded when it is more likely than not that some of the deferred tax assets will not be realized.

Income tax positions must meet a more-likely-than-not recognition in order to be recognized in the financial statements. We recognize potential accrued interest and penalties related to unrecognized tax benefits within operations as income tax expense. As new information becomes available, the assessment of the recognition threshold and the measurement of the associated tax benefit of uncertain tax positions may result in financial statement recognition or derecognition.

Net Income Per Common Share

Basic and diluted earnings per share were computed based on net earnings. The weighted average number of common shares outstanding during the period was used in the calculation of basic earnings per share. This number of shares was increased by contingent shares that could be issued under various compensation plans as well as by the dilutive effect of stock options based on the treasury stock method in the calculation of diluted earnings per share.
The following table sets forth the computations of basic and diluted earnings per share (amounts in millions, except per share data):

Net Income Per Common Share:	**2016**	**2015**	**2014**
Net income attributable to Teledyne	**$ 190.9**	$ 195.8	$ 217.7
Basic earnings per common share:			
Weighted average common shares outstanding	**34.6**	35.3	37.1
Basic earnings per common share	**$ 5.52**	$ 5.55	$ 5.87
Diluted earnings per share:			
Weighted average common shares outstanding	**34.6**	35.3	37.1
Effect of diluted securities	**0.9**	0.7	0.8
Weighted average diluted common shares outstanding	**35.5**	36.0	37.9
Diluted earnings per common share	**$ 5.37**	$ 5.44	$ 5.75

For 2016, 2015 and 2014 no stock options were excluded in the computation of diluted earnings per share.

For 2016, 2015 and 2014, stock options to purchase 2.2 million, 2.4 million and 2.9 million shares of common stock, respectively, had exercise prices that were less than the average market price of the Company's common stock during the respective periods and are included in the computation of diluted earnings per share.

In addition, no contingent shares of the Company's common stock under the restricted stock or performance share compensation plans were excluded from fully diluted shares outstanding for 2016 or 2014. In 2015, 3,997 contingent shares of the Company's common stock under the restricted stock or performance share compensation plans were excluded from fully diluted shares outstanding.

Accounts Receivable

Receivables are presented net of an allowance for doubtful accounts of $5.2 million at January 1, 2017, and $6.3 million at January 3, 2016. Expense recorded for the allowance for doubtful accounts was $0.7 million, $0.9 million and $3.6 million for 2016, 2015 and 2014, respectively. An allowance for doubtful accounts is established for losses expected to be incurred on accounts receivable balances. Judgment is required in the estimation of the allowance and is based upon specific identification, collection history and creditworthiness of the debtor. Trade credit is extended based upon evaluations of each customer's ability to perform its obligations, which are updated periodically.

Cash

Cash totaled $98.6 million at January 1, 2017, of which $95.2 million was held by foreign subsidiaries of Teledyne.

Inventories

Inventories are stated at the lower of cost or market, less progress payments. The majority of inventory values are valued on an average cost, or first-in, first-out method, while the remainder are stated at cost based on the last-in, first-out method. Costs include direct material, direct labor, applicable manufacturing and engineering overhead, and other direct costs. Additionally, certain inventory costs are also reflective of the estimates used in applying the percentage-of-completion revenue recognition method. Judgment is required when establishing reserves to reduce the carrying amount of inventory to market or net realizable value. Inventory reserves are recorded when inventory is considered to be excess or obsolete based upon an analysis of actual on-hand quantities on a part-level basis to forecasted product demand and historical usage.

Property, Plant and Equipment

Property, plant and equipment is capitalized at cost. Property, plant and equipment is stated at cost less accumulated depreciation and amortization. Depreciation and amortization are determined using a combination of accelerated and straight-line methods over the estimated useful lives of the various asset classes. Buildings and building improvements are depreciated over periods not exceeding 45 years, equipment over 5 to 18 years, computer hardware and software over 3 to 7 years and leasehold improvements over the shorter of the estimated remaining lives or lease terms. Significant improvements are capitalized while maintenance and repairs are charged to expense as incurred. Depreciation expense on property, plant and equipment, including assets under capital leases, was $57.6 million in 2016, $58.3 million in 2015 and $62.3 million in 2014. Other income for 2016 included a gain of $17.9 million on the sale of a former operating facility in California.

Goodwill and Other Intangible Assets

Business acquisitions are accounted for under the acquisition method by assigning the purchase price to tangible and intangible assets acquired and liabilities assumed. Assets acquired and liabilities assumed are recorded at their fair values and the excess of the purchase price over the amounts assigned is recorded as goodwill.

Goodwill and intangible assets with indefinite lives are not amortized, but tested at least annually for impairment. The Company performs an annual impairment test for goodwill and other acquired intangible assets in the fourth quarter of each year, or more often as circumstances require. The two-step impairment test is used to first identify potential goodwill impairment and then measure the amount of goodwill impairment loss, if any. When it is determined that an impairment has occurred, an appropriate charge to operations is recorded. No impairment of goodwill was indicated in 2016, 2015 or 2014, based on the annual impairment test completed in the fourth quarter of each year. The Company recorded a $1.0 million asset impairment related to acquired intangible assets in 2016. The Company recorded a $0.5 million impairment to acquired intangible assets in 2015 and in 2014, the Company recorded a $0.7 million impairment to acquired intangible assets. Acquired intangible assets with finite lives are amortized and reflected in the segments operating income over their estimated useful lives.

We review intangible assets subject to amortization for impairment whenever events or circumstances indicate that the carrying value of the asset may not be recoverable. We assess the recoverability of the carrying value of assets held for use based on a review of projected undiscounted cash flows. Impairment losses, where identified, are determined as the excess of the carrying value over the estimated fair value of the long-lived asset.

Deferred Compensation Plan

The Company has a non-qualified executive deferred compensation plan that provides supplemental retirement income benefits for a select group of management. This plan permits eligible employees to make salary and bonus deferrals that are 100% vested. We have an unsecured obligation to pay in the future the value of the deferred compensation adjusted to reflect the performance, whether positive or negative, of selected investment measurement options chosen by each participant during the deferral period. As of January 1, 2017 and January 3, 2016, $47.4 million and $43.9 million, respectively, is included in other long-term liabilities related to these deferred compensation liabilities. Additionally, the Company purchased life insurance policies on certain participants to potentially offset these unsecured obligations. These policies are recorded at their cash surrender value as determined by the insurance carrier. The cash surrender value of these policies was $48.5 million and $47.9 million, as of January 1, 2017 and January 3, 2016, respectively, and are recorded in other non-current assets.

Environmental

Costs that mitigate or prevent future environmental contamination or extend the life, increase the capacity or improve the safety or efficiency of property utilized in current operations are capitalized. Other costs that relate to current operations or an existing condition caused by past operations are expensed. Environmental liabilities are recorded when the Company's liability is probable and the costs are reasonably estimable, which is generally not later than the completion of the feasibility study or the Company's recommendation of a remedy or commitment to an appropriate plan of action. The accruals are reviewed periodically and, as investigations and remediations proceed, adjustments are made as necessary. Accruals for losses from environmental remediation obligations do not consider the effects of inflation, and anticipated expenditures are not discounted to their present value. The accruals are not reduced by possible recoveries from insurance carriers or other third parties, but do reflect anticipated allocations among potentially responsible parties at federal Superfund sites or similar state-managed sites and an assessment of the likelihood that such parties will fulfill their obligations at such sites. The measurement of environmental liabilities by the Company is based on currently available facts, present laws and regulations, and current technology. Such estimates take into consideration the Company's prior experience in site investigation and remediation, the data concerning cleanup costs available from other companies and regulatory authorities, and the professional judgment of the Company's environmental personnel in consultation with

outside environmental specialists, when necessary. The Company's reserves for environmental remediation obligations totaled $7.0 million and $8.7 million at January 1, 2017 and January 3, 2016, respectively.

Foreign Currency Translation

The Company's foreign entities' accounts are generally measured using local currency as the functional currency. Assets and liabilities of these entities are translated at the exchange rate in effect at year-end. Revenues and expenses are translated at average month end rates of exchange prevailing during the year. Unrealized translation gains and losses arising from differences in exchange rates from period to period are included as a component of accumulated other comprehensive loss in stockholders' equity.

Hedging Activities/Derivative Instruments

Teledyne transacts business in various foreign currencies and has international sales and expenses denominated in foreign currencies, subjecting the Company to foreign currency risk. The Company's primary objective is to protect the United States dollar value of future cash flows and minimize the volatility of reported earnings. The Company utilizes foreign currency forward contracts to reduce the volatility of cash flows primarily related to forecasted revenue and expenses denominated in Canadian dollars for our Canadian companies. These contracts are designated and qualify as cash flow hedges.

The effectiveness of the cash flow hedge contracts, excluding time value, is assessed prospectively and retrospectively on a monthly basis using regression analysis, as well as using other timing and probability criteria. To receive hedge accounting treatment, all hedging relationships are formally documented at the inception of the hedges and must be highly effective in offsetting changes to future cash flows on hedged transactions. The effective portion of the cash flow hedge contracts' gains or losses resulting from changes in the fair value of these hedges is initially reported, net of tax, as a component of AOCI in stockholders' equity until the underlying hedged item is reflected in our consolidated statements of income, at which time the effective amount in AOCI is reclassified to cost of sales in our consolidated statements of income. Net deferred losses recorded in AOCI, net of tax, for contracts that will mature in the next 12 months total $0.8 million. These losses are expected to be offset by anticipated gains in the value of the forecasted underlying hedged item.

In the event that the gains or losses in AOCI are deemed to be ineffective, the ineffective portion of gains or losses resulting from changes in fair value, if any, is reclassified to other income and expense. In the event that the underlying forecasted transactions do not occur, or it becomes remote that they will occur, within the defined hedge period, the gains or losses on the related cash flow hedges will be reclassified from AOCI to other income and expense. During the current reporting period, all forecasted transactions occurred and, therefore, there were no such gains or losses reclassified to other income and expense. As of January 1, 2017, Teledyne had foreign currency forward contracts designated as cash flow hedges to buy Canadian dollars and to sell U.S. dollars totaling $56.8 million and these contracts had a negative fair value of $1.1 million. These foreign currency forward contracts have maturities ranging from March 2017 to February 2018.

In addition, the Company utilizes foreign currency forward contracts which are not designated as hedging instruments for accounting purposes to mitigate foreign exchange rate risk associated with foreign currency denominated monetary assets and liabilities, including intercompany receivables and payables. As of January 1, 2017, Teledyne had foreign currency contracts of this type in the following pairs (in millions):

Contracts to Buy			**Contracts to Sell**		
Currency	**Amount**		**Currency**	**Amount**	
Canadian Dollars	C$	32.1	U.S. Dollars	US$	24.2
Euros	€	10.4	U.S. Dollars	US$	11.1
Great Britain Pounds	£	1.4	Australian Dollars	A$	2.4
Great Britain Pounds	£	41.3	U.S. Dollars	US$	52.0
Canadian Dollars	C$	15.9	Euros	€	10.6
U.S. Dollars	US$	0.9	Japanese Yen	¥	110.0
Singapore Dollars	S$	1.8	U.S. Dollars	US$	1.3

The above table includes non-designated hedges derived from terms contained in triggered or previously designated cash flow hedges. The gains and losses on these derivatives which are not designated as hedging instruments, are intended to, at a minimum, partially offset the transaction gains and losses recognized in earnings.

The Company entered into a short-term option contract to purchase £600.0 million in December 2016. This option was purchased to protect against increases in the U.S. dollar equivalent cost of the pending e2v acquisition from adverse currency movements. The option contract was not designated as a hedging instrument for accounting purposes.

All derivatives are recorded on the balance sheet at fair value. As discussed below, the accounting for gains and losses resulting from changes in fair value depends on the use of the derivative and whether it is designated and qualifies for hedge accounting. Teledyne does not use foreign currency forward contracts for speculative or trading purposes.

The effect of derivative instruments designated as cash flow hedges for 2016 and 2015 was as follows (in millions):

	2016	2015
Net gain (loss) recognized in AOCI (a)	**$ 2.3**	$ (11.0)
Net loss reclassified from AOCI into cost of sales (a)	**$ (2.8)**	$ (9.1)
Net foreign exchange gain (loss) recognized in other income and expense (b)	**$ (0.1)**	$ 0.5

(a) Effective portion
(b) Amount excluded from effectiveness testing

The effect of derivative instruments not designated as cash flow hedges recognized in other income and expense for 2016 and 2015 was a loss of $9.6 million and $10.6 million, respectively.

The fair values of the Company's derivative financial instruments are presented below. All fair values for these derivatives were measured using Level 2 information as defined by the accounting standard hierarchy (in millions):

Asset/(Liability) Derivatives	**Balance sheet location**	**January 1, 2017**	**January 3, 2016**
Derivatives designated as hedging instruments:			
Cash flow forward contracts	Accrued liabilities	**$ (1.0)**	$ (4.7)
Cash flow forward contracts	Other long-term liabilities	**(0.1)**	(1.3)
Total derivatives designated as hedging instruments		**(1.1)**	(6.0)
Derivatives not designated as hedging instruments:			
Non-designated forward contracts	Other current assets	**6.4**	0.2
Non-designated forward contracts	Accrued liabilities	**(1.0)**	(6.0)
Total derivatives not designated as hedging instruments		**5.4**	(5.8)
Total asset/(liability) derivatives		**$ 4.3**	$ (11.8)

Supplemental Cash Flow Information

Cash payments for federal, foreign and state income taxes were $24.6 million for 2016, which are net of $1.4 million in tax refunds. Cash payments for federal, foreign and state income taxes were $86.5 million for 2015, which are net of $4.8 million in tax refunds. Cash payments for federal, foreign and state income taxes were $72.7 million for 2014, which are net of $2.3 million in tax refunds. Cash payments for interest and credit facility fees totaled $23.6 million, $24.2 million and $17.6 million for 2016, 2015 and 2014, respectively.

Fair Value Measurements

When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, the Company considers the principal or most advantageous market in which it would transact and considers assumptions that market participants would use when pricing the asset or liability, such as inherent risk, transfer restrictions, and risk of nonperformance. The Company uses the following three levels of inputs in determining the fair value of the Company's assets and liabilities, focusing on the most observable inputs when available:

- Level 1-Quoted prices in active markets for identical assets or liabilities.
- Level 2-Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets with insufficient volume or infrequent transactions (less active markets); or model-derived valuations in which all significant inputs are observable or can be derived principally from or corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3-Unobservable inputs to the valuation methodology that are significant to the measurement of fair value of assets or liabilities.

To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for disclosure purposes, the level in the fair value hierarchy within which the fair value measurement is disclosed is determined based on the lowest level input that is significant to the fair value measurement.

Related Party Transactions

The Company had no related party transactions that are required to be disclosed for all periods presented.

Recent Accounting Standards

In March 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-09, Compensation - Stock Compensation (Topic 718), Improvements to Employee Share-Based Payment Accounting. The ASU is intended to simplify several aspects of the accounting for employee share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The guidance is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods, with early adoption permitted for any entity in any interim or annual period. Teledyne elected to adopt early this ASU in the third quarter of 2016, therefore Teledyne is required to report the material impacts of this standard as though the ASU had been adopted at the beginning of the fiscal year. Accordingly, Teledyne recognized additional income tax benefits as an increase to net income of $8.5 million for 2016. Teledyne has elected to record forfeitures as they occur, which did not have a material impact on the condensed consolidated financial results. The new guidance did not impact any periods prior to our 2016 fiscal year, as the changes were applied on a prospective basis.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers, which provides a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and will supersede most current revenue recognition guidance. The new standard, as subsequently amended, is effective for Teledyne for interim and annual reporting periods beginning after December 15, 2017, with early adoption permitted for interim and annual reporting periods beginning after December 15, 2016. The new standard can be adopted either retrospectively to each prior reporting period presented or as a cumulative-effect adjustment as of the date of adoption.

Under the new standard, an entity recognizes revenue when or as it satisfies a performance obligation by transferring a good or service to the customer, either at a point in time or over time. Teledyne expects to recognize revenue over time on most of its contracts that are covered by contract accounting standards using cost inputs to measure progress toward completion of its performance obligations, which is similar to the POC cost-to-cost method currently used on certain of these contracts today. The percentage of Teledyne revenue recognized using the POC method was 30.5%, 31.2% in 2015, and 28.7% in 2014. Depending on the contract, we currently measure the extent of progress toward completion using the units-of-delivery method, cost-to-cost method or upon attainment of scheduled performance contract milestones which could be time, event or expense driven.

While the Company is currently evaluating the expected impact of the adoption of this standard on its consolidated financial statements, related disclosures and the transition alternatives available, Teledyne will adopt the standard in the first quarter of fiscal year 2018. Furthermore, Teledyne expects to determine the transition method and the effect of this standard on our consolidated financial statements in the second quarter of 2017.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The new guidance will require lessees to recognize almost all leases on their balance sheet as a right-of-use asset and a lease liability, other than leases that meet the definition of a short-term lease. For income statement purposes, the FASB retained a dual model, requiring leases to be classified as either operating or finance. The new guidance is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years, with early adoption permitted. The new guidance must be adopted using a modified retrospective transition, requiring application at the beginning of the earliest comparative period presented. The Company is currently evaluating the impact this guidance will have on the consolidated financial statements and footnote disclosures.

In May 2015, the FASB issued ASU No. 2015-07, Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent). Under the new guidance, investments for which fair value is measured at net asset value per share (or its equivalent) using the practical expedient will no longer be categorized in the fair value hierarchy. It is effective for interim and annual reporting periods beginning after December 15, 2015. The Company adoption of the guidance, effective January 4, 2016, did not impact on our consolidated financial position, results of operations, or cash flows but did impact the disclosures related to certain investments related to our domestic pension plan which are contained in Note 11 to our Consolidated Financial Statements.

In January 2017, the FASB issued ASU 2017-04, Simplifying the Test for Goodwill Impairment, which eliminates the computation of the implied fair value of goodwill to measure a goodwill impairment charge. Instead, entities will record a goodwill impairment charge based on the excess of a reporting unit's carrying amount over its fair value. The new standard, will be effective for the Company prospectively for interim and annual reporting periods beginning after December 15, 2019, with early adoption permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. We expect the adoption of this standard will reduce the complexity surrounding the evaluation of goodwill for impairment. The impact of this new standard for the Company will depend on the outcomes of future goodwill impairment tests.

Note 3. Business Acquisitions, Goodwill and Acquired Intangible Assets

The Company spent $93.4 million, $66.7 million and $195.8 million on acquisitions and other investments in 2016, 2015 and 2014, respectively.

On December 6, 2016, Teledyne Instruments, Inc. acquired Hanson Research Corporation ("Hanson Research") for $25.0 million in cash. Hanson Research, headquartered in Chatsworth, California, specializes in analytical instrumentation for the pharmaceutical industry.

On November 2, 2016, Teledyne Instruments, Inc. acquired assets of IN USA, Inc. ("IN USA") for $10.2 million in cash. IN USA, headquartered in Norwood, Massachusetts, manufactures a range of ozone generators, ozone analyzers and other gas monitoring instruments utilizing ultraviolet and infrared based technologies. Teledyne intends to relocate and consolidate manufacturing into the new, owned facility of Teledyne Advanced Pollution Instrumentation in San Diego, California.

On May 3, 2016, Teledyne DALSA, Inc., a Canadian-based subsidiary, acquired the assets and business of CARIS, Inc. ("CARIS") for an initial cash payment of $26.2 million, net of cash acquired. Based in Fredericton, New Brunswick, Canada, CARIS is a leading developer of geospatial software designed for the hydrographic and marine community.

On April 15, 2016, Teledyne LeCroy, Inc., a U.S.-based subsidiary, acquired assets of Quantum Data, Inc. ("Quantum Data") for $17.3 million in cash. Based in Elgin, Illinois, Quantum Data provides electronic test and measurement instrumentation and is a market leader in video protocol analysis test tools. On April 6, 2016, Teledyne LeCroy, Inc. also acquired Frontline Test Equipment, Inc. ("Frontline") for $13.7 million in cash. Based in Charlottesville, Virginia, Frontline provides electronic test and measurement instrumentation and is a market leader in wireless protocol analysis test tools. Each of the 2016 acquisitions are part of the Instrumentation segment except for CARIS which is part of the Digital Imaging segment.

On June 5, 2015, Teledyne DALSA BV, a Netherlands-based subsidiary, acquired ICM for $21.8 million, net of cash acquired. In December 2016, an additional $2.5 million was paid by Teledyne related to an indemnification holdback. Based in Liège, Belgium, ICM is a supplier of portable X-ray generators for non-destructive testing applications, as well as complete X-ray imaging systems for on-site security screening and is part of the Digital Imaging segment.

On April 29, 2015, Teledyne DALSA, Inc. acquired the remaining 49% noncontrolling interest in the parent company of Optech for $22.0 million in cash. As a result of the purchase, the difference between the cash paid and the balance of noncontrolling interest was recorded to additional paid in capital. The balance of the noncontrolling interest of $41.2 million at December 28, 2014 decreased by $0.3 million for the net loss and $1.3 million in translation adjustments prior to the purchase which eliminated the remaining balance. The balance of the noncontrolling interest of $47.0 million at December 29, 2013 decreased by $2.1 million for the net loss and $3.7 million in translation adjustments, resulting in a balance of $41.2 million at December 28, 2014. Teledyne no longer has any noncontrolling interests. Optech is part of the Digital Imaging segment.

On February 2, 2015, Teledyne acquired Bowtech through a U.K.-based subsidiary for $18.9 million in cash, net of cash acquired and including an estimated working capital adjustment. Based in Aberdeen, Scotland, Bowtech designs and manufactures harsh underwater environment vision systems and is part of the Instrumentation segment. Also in 2015, Teledyne made an additional investment in Ocean Aero.

Teledyne funded the purchases from borrowings under its credit facility and cash on hand. The ICM, Bowtech and Optech acquisitions were funded with cash held by foreign subsidiaries. The results of the acquisitions have been included in Teledyne's results since the dates of the respective acquisition.

During 2014, Teledyne made four acquisitions, the largest of which was Bolt in November 2014.

On November 18, 2014, Teledyne acquired all of the outstanding common shares of Bolt for $22.00 per share payable in cash. The aggregate value for the transaction was $171.0 million, excluding transaction costs and taking into account Bolt's stock options, other liabilities and net cash on hand. Bolt is a developer and manufacturer of marine seismic data acquisition equipment used for offshore oil and natural gas exploration. Bolt is also a developer and manufacturer of remotely operated robotic vehicles systems used for a variety of underwater tasks. Bolt had sales of $67.5 million for its fiscal year ended June 30, 2014. In addition to the acquisition of Bolt in 2014, the Company completed the acquisition of three businesses and invested in Ocean Aero for a total of $24.8 million.

All of the 2014 acquisitions are part of the Instrumentation segment.

The results of these acquisitions have been included in Teledyne's results since the dates of their respective acquisition.

The primary reasons for the above acquisitions were to strengthen and expand our core businesses through adding complementary product and service offerings, allowing greater integrated products and services, enhancing our technical capabilities or increasing our addressable markets. The significant factors that resulted in recognition of goodwill were: (a) the purchase price was based on cash flow and return on capital projections assuming integration with our businesses and (b) the calculation of the fair value of tangible and intangible assets acquired that qualified for recognition. Teledyne funded the purchases primarily from borrowings under its credit facility and cash on hand.

On December 12, 2016, Teledyne and e2v technologies plc ("e2v") reached agreement on the terms of a recommended cash acquisition to be made by Teledyne for the ordinary share capital of e2v by means of a Scheme of Arrangement (the "Offer"). Under the terms of the Offer, e2v's ordinary shareholders will receive 275 pence in cash for each e2v share valuing the entire issued and to be issued ordinary share capital of e2v at approximately £619.6 million on a fully diluted basis. It is expected that, subject to the satisfaction or waiver of all relevant conditions, the acquisition will be completed in the first half of calendar 2017.

For the machine vision market, e2v provides high performance image sensors and custom camera solutions and application specific standard products. In addition, e2v provides high performance space qualified imaging sensors and arrays for space science and astronomy. e2v also produces components and subsystems that deliver high reliability radio frequency power generation for healthcare, industrial and defense applications. Finally, the company provides high reliability semiconductors and board-level solutions for use in aerospace, space and radio frequency communications applications. At announcement, the aggregate enterprise value for the transaction is expected be approximately £627.1 million (or approximately $788.9 million) taking into account e2v stock options and net debt. For the year ended March 31, 2016, e2v had sales of approximately £236.4 million.

Teledyne's Offer will be made in accordance with the relevant requirements of the UK City Code on Takeovers and Mergers ("Takeover Code") (including customary closing conditions) and be governed by English law. Teledyne expects to fund the acquisition from cash on hand and its credit facility.

Teledyne's goodwill was $1,193.5 million at January 1, 2017, and $1,140.2 million at January 3, 2016. The increase in the balance of goodwill in 2016 resulted from the goodwill from current year acquisitions, partially offset by the impact of exchange rate changes. Teledyne's net acquired intangible assets were $234.6 million at January 1, 2017, and $243.3 million at January 3, 2016. The decrease in the balance of acquired intangible assets in 2016 primarily resulted from amortization, partially offset by acquired intangible assets from current year acquisitions. The Company's cost to acquire the 2016 acquisitions has been allocated to the assets acquired and liabilities assumed based upon their respective fair values as of the date of the completion of the acquisition. The differences between the fair value of the consideration paid and the estimated fair value of the assets and liabilities acquired has been recorded as goodwill. The Company is still in the process of specifically identifying the amount to be assigned to certain assets, including acquired intangible assets, and liabilities and the related impact on taxes and goodwill for the IN USA and Hanson Research acquisitions. The Company made preliminary estimates as of January 1, 2017, since there was insufficient time between the acquisition date and the end of the period to finalize the analysis. The Company has completed the allocation of all other 2016 acquisitions.

The following tables show the purchase price (net of cash acquired), goodwill acquired and intangible assets acquired for the acquisitions made in 2016 and 2015 (in millions):

		2016		
Acquisition	**Acquisition Date**	**Cash Paid (a)**	**Goodwill Acquired**	**Acquired Intangible Assets**
Frontline	April 6, 2016	**$ 13.7**	**$ 11.3**	**$ 2.3**
Quantum Data	April 15, 2016	**17.3**	**10.7**	**5.4**
CARIS	May 3, 2016	**26.2**	**22.2**	**3.6**
IN USA	November 2, 2016	**10.2**	**6.3**	**3.0**
Hanson Research	December 6, 2016	**25.0**	**13.5**	**8.4**
Other Investments		**1.0**	—	—
		$ 93.4	**$ 64.0**	**$ 22.7**

(a) net of any cash acquired.

		2015		
Acquisition	**Acquisition Date**	**Cash Paid (a)**	**Goodwill Acquired**	**Acquired Intangible Assets**
Bowtech	February 2, 2015	$ 18.9	$ 7.0	$ 4.3
ICM	June 5, 2015	21.8	19.2	5.8
Purchase of remaining interest of Optech	April 29, 2015	22.0	—	—
Other investments		4.0	1.4	0.9
		$ 66.7	$ 27.6	$ 11.0

(a) net of any cash acquired.

Fair values allocated to the assets acquired and liabilities assumed (in millions):	**2016**	**2015**
Current assets, excluding cash acquired	**$ 11.9**	$ 8.5
Property, plant and equipment	**3.9**	9.8
Goodwill	**64.0**	27.6
Acquired intangible assets	**22.7**	11.0
Other long-term assets	**1.2**	1.9
Total assets acquired	**103.7**	58.8
Current liabilities	**(9.9)**	(5.1)
Long-term liabilities	**(0.4)**	(9.0)
Total liabilities assumed	**(10.3)**	(14.1)
Noncontrolling interests (a)	**—**	22.0
Cash paid, net of cash acquired	**$ 93.4**	$ 66.7

(a) relates to the purchase of the remaining interest in Optech.

The following table is a summary at the acquisition date of the acquired intangible assets and weighted average useful life in years for the acquisitions made in 2016 and 2015 (dollars in millions):

	2016		2015	
Intangibles subject to amortization:	**Intangible Assets**	**Weighted average useful life in years**	**Intangible Assets**	**Weighted average useful life in years**
Proprietary technology	**$ 10.4**	**9.4**	$ 5.7	9.9
Customer list/relationships	**8.9**	**13.2**	3.0	8.3
Backlog	**0.3**	**0.3**	—	n/a
Trademarks	**0.5**	**3.0**	—	—
Total intangibles subject to amortization	**20.1**	**10.8**	8.7	9.4
Intangibles not subject to amortization:				
Trademarks	**2.6**	**n/a**	2.3	n/a
Total acquired intangible assets	**$ 22.7**	**n/a**	$ 11.0	n/a
Goodwill	**$ 64.0**	**n/a**	$ 27.6	n/a

Goodwill resulting from the acquisitions of Frontline, Quantum Data, IN USA and CARIS made in 2016 will be deductible for tax purposes. Goodwill resulting from the 2016 acquisition of Hanson Research and the 2015 acquisitions of Bowtech and ICM will not be deductible for tax purposes.

Goodwill (in millions):	Instrumentation	Digital Imaging	Aerospace and Defense Electronics	Engineered Systems	Total
Balance at December 28, 2014	$ 680.1	$ 302.2	$ 144.5	$ 23.8	$ 1,150.6
Current and prior year acquisitions (a)	11.8	19.2	—	—	31.0
Foreign currency changes	(11.1)	(28.9)	(1.0)	(0.4)	(41.4)
Balance at January 3, 2016	**$ 680.8**	**$ 292.5**	**$ 143.5**	**$ 23.4**	**$ 1,140.2**
Current year acquisitions	**41.8**	**22.2**	**—**	**—**	**64.0**
Foreign currency changes	**(9.3)**	**2.7**	**(4.1)**	**—**	**(10.7)**
Balance at January 1, 2017	**$ 713.3**	**$ 317.4**	**$ 139.4**	**$ 23.4**	**$ 1,193.5**

(a) Includes $3.4 million related to the completion of the Bolt purchase price allocation in 2015.

	2016			2015		
	Gross carrying amount	Accumulated amortization	Net carrying amount	Gross carrying amount	Accumulated amortization	Net carrying amount
Other acquired intangible assets (in millions):						
Proprietary technology	**$ 207.2**	**$ 130.1**	**$ 77.1**	$ 198.6	$ 114.2	$ 84.4
Customer list/relationships	**121.9**	**68.3**	**53.6**	114.3	58.8	55.5
Patents	**0.7**	**0.6**	**0.1**	0.7	0.6	0.1
Non-compete agreements	**0.9**	**0.9**	**—**	0.9	0.9	—
Trademarks	**3.8**	**2.4**	**1.4**	3.4	2.1	1.3
Backlog	**12.7**	**12.6**	**0.1**	12.5	12.5	—
Other acquired intangible assets subject to amortization	**347.2**	**214.9**	**132.3**	330.4	189.1	141.3
Other acquired intangible assets not subject to amortization:						
Trademarks	**102.3**	**—**	**102.3**	102.0	—	102.0
Total other acquired intangible assets	**$ 449.5**	**$ 214.9**	**$ 234.6**	$ 432.4	$ 189.1	$ 243.3

Amortizable other intangible assets are amortized on a straight-line basis over their estimated useful lives ranging from one to 15 years. Consistent with Teledyne's growth strategy, we seek to acquire companies in markets characterized by high barriers to entry and that include specialized products not likely to be commoditized. Given our markets and highly engineered nature of our products, the rates of new technology development and customer acquisition and/or attrition are often not volatile. As such, we believe the value of acquired intangible assets decline in a linear, as opposed to an accelerated fashion, and we believe amortization on a straight-line basis is appropriate.

The Company recorded $28.3 million, $30.6 million and $32.0 million in amortization expense in 2016, 2015 and 2014, respectively, for other acquired intangible assets. The expected future amortization expense for the next five years is as follows (in millions): 2017 - $27.3; 2018 - $24.2; 2019 - $17.1; 2020 - $15.2; 2021 - $14.3.

The estimated remaining useful lives by asset category as of January 1, 2017, are as follows:

Intangibles subject to amortization	Weighted average remaining useful life in years
Proprietary technology	4.6
Customer list/relationships	5.3
Patents	4.3
Backlog	0.3
Trademarks	4.9
Total intangibles subject to amortization	4.8

Note 4. Financial Instruments

The Company had no cash equivalents at January 1, 2017 or January 3, 2016. The Company has categorized its cash equivalents, if any, as a Level 1 financial asset, measured at fair value based on quoted prices in active markets of identical assets. The fair value of the Company's forward currency contracts as of January 1, 2017 and January 3, 2016, are disclosed in Note 2, "Hedging Activities/Derivative Instruments," of the Notes to the Consolidated Financial Statements below and are based on Level 2 inputs. The fair value of the Company's senior unsecured notes as described in Note 9, "Long-Term Debt," of the Notes to the Consolidated Financial Statements approximated the carrying value based upon Level 2 inputs at January 1, 2017 and January 3, 2016. The fair value of the Company's credit facility, term loans and other debt, also described in Note 9, at January 1, 2017 and January 3, 2016, approximates the carrying value due to the variable market rate used to calculate interest payments. The Company does not have any other significant financial assets or liabilities that are measured at fair value. The carrying value of other on-balance-sheet financial instruments approximates fair value, and the cost, if any, to terminate off-balance sheet financial instruments (primarily letters of credit) is not significant.

Note 5. Accounts Receivable

Accounts receivable (in millions):	**Balance at year-end**	
	2016	**2015**
Commercial and other receivables	**$ 329.1**	$ 325.5
U.S. Government and prime contractors contract receivables:		
Billed receivables	**19.2**	19.9
Unbilled receivables	**40.6**	33.9
	388.9	379.3
Allowance for doubtful accounts	**(5.2)**	(6.3)
Total accounts receivable, net	**$ 383.7**	$ 373.0

The billed contract receivables from the U.S. Government and prime contractors contain $10.6 million and $12.9 million at January 1, 2017, and January 3, 2016, respectively, due to long-term contracts. The unbilled contract receivables from the U.S. Government and prime contractors contain $36.9 million and $33.8 million at January 1, 2017, and January 3, 2016, respectively, due to long-term contracts.

Unbilled contract receivables represent accumulated costs and profits earned but not yet billed to customers. The Company believes that substantially all such amounts will be billed and collected within one year.

Note 6. Inventories

Inventories (in millions)	**Balance at year-end**	
	2016	**2015**
Raw materials and supplies	**$ 146.0**	$ 141.6
Work in process	**147.8**	149.4
Finished goods	**43.0**	45.8
	336.8	336.8
Progress payments	**(9.1)**	(12.3)
Reduction to LIFO cost basis	**(13.5)**	(15.3)
Total inventories, net	**$ 314.2**	$ 309.2

Inventories at cost determined on the LIFO method were $68.4 million at January 1, 2017, and $96.6 million at January 3, 2016. The remainder of the inventories using average cost or the FIFO methods, were $268.4 million at January 1, 2017, and $240.2 million at January 3, 2016. Certain inventory costs are also reflective of the estimates used in applying the percentage-of-completion revenue recognition method.

The Company recorded $0.7 million in LIFO income in 2016, $1.2 million in LIFO income in 2015 and less than $0.1 million of LIFO income in 2014.

Total inventories at current cost were net of reserves for excess, slow moving and obsolete inventory of $59.4 million and $58.8 million at January 1, 2017, and January 3, 2016, respectively. Judgment is required when establishing reserves to reduce the carrying amount of inventory to market or net realizable value. Inventory reserves are recorded when inventory is considered to be excess or obsolete based upon an analysis of actual on-hand quantities on a part-level basis to forecasted product demand and historical usage.

Inventories, before progress payments, related to long-term contracts were $87.2 million and $73.8 million at January 1, 2017, and January 3, 2016, respectively. Progress payments related to long-term contracts were $9.1 million and $12.3 million at January 1, 2017, and January 3, 2016, respectively. Under the contractual arrangements by which progress payments are

received, the customer has an ownership right in the inventories associated with specific contracts.

Note 7. Supplemental Balance Sheet Information

Property, plant and equipment (in millions):	Balance at year-end	
	2016	2015
Land	**$ 37.5**	$ 32.9
Buildings	**204.3**	182.0
Equipment and software	**567.5**	561.2
	809.3	776.1
Accumulated depreciation and amortization	**(468.5)**	(454.8)
Total property, plant and equipment, net	**$ 340.8**	$ 321.3

The following table presents the balance of selected components of Teledyne's balance sheet (in millions):

Balance sheet items	Balance sheet location	January 1, 2017	January 3, 2016
Income tax receivable	Prepaid expenses and other current assets	**$ 5.4**	$ 28.8
Deferred compensation assets	Other assets long-term	**$ 48.5**	$ 47.9
Salaries and wages	Accrued liabilities	**$ 90.1**	$ 89.5
Customer related accruals, deposits and credits	Accrued liabilities	**$ 72.4**	$ 47.9
Product warranty reserves	Accrued liabilities	**$ 12.5**	$ 14.0
Accrued pension obligation	Other long-term liabilities	**$ 44.0**	$ 46.7
Accrued postretirement benefits	Other long-term liabilities	**$ 8.7**	$ 9.6
Deferred tax liabilities	Other long-term liabilities	**$ 26.8**	$ 37.9
Deferred compensation liabilities	Other long-term liabilities	**$ 47.4**	$ 43.9

Note 8. Stockholders' Equity

Common stock and treasury stock activity:	Stock	Treasury Stock
Balance, December 29, 2013	37,571,182	—
Acquired	—	1,396,290
Issued	126,683	(354,009)
Balance, December 28, 2014	37,697,865	1,042,281
Acquired	—	2,561,815
Issued	—	(420,830)
Balance, January 3, 2016	**37,697,865**	**3,183,266**
Acquired	**—**	**138,831**
Issued	—	**(734,994)**
Balance, January 1, 2017	**37,697,865**	**2,587,103**

Shares issued include stock options exercised as well as shares issued under certain compensation plans.

Treasury Stock

In October 2011, the Company's Board of Directors authorized a stock repurchase program to repurchase up to 2,500,000 shares of the Company's common stock. In 2014, the Company purchased 469,290 shares of common stock in open market purchases for $45.0 million. Following the open market purchases, in September 2014, the Company entered into a $101.6 million accelerated share repurchase ("ASR") agreement with a financial institution ("ASR Counterparty") in a privately negotiated transaction for 1,030,000 shares of the Company's common stock. Pursuant to the ASR agreement, in September 2014, the Company advanced $101.6 million to the ASR counterparty and received 927,000 shares of common stock, which used $91.4 million of the $101.6 million advanced, representing 90% of the estimated shares to be repurchased under the ASR agreement. In May 2015, the September 2014 ASR agreement was settled and Teledyne received 78,522 shares of common stock on June 3, 2015.

On January 27, 2015, the Company's Board of Directors authorized an additional stock repurchase program authorizing the Company to repurchase up to an additional 2,500,000 shares of its common stock. In February 2015, the Company entered into a $142.0 million ASR agreement with a financial institution in a privately negotiated transaction for 1,500,000 shares of the Company's common stock. Pursuant to the ASR agreement, in February 2015, the Company advanced $142.0 million to

the ASR counterparty and received 1,425,000 shares of common stock, which used $134.9 million of the $142.0 million advanced, representing 95% of the estimated shares to be repurchased under the ASR agreement. In November 2015, the February 2015 ASR was settled with the Company making a payment of $1.2 million. In November 2015, the Company entered into a $100.5 million ASR agreement with a financial institution in a privately negotiated transaction for 1,100,000 shares of the Company's common stock. Pursuant to the ASR agreement, the Company advanced $100.5 million to the ASR counterparty and received 1,045,000 shares of common stock, which used $95.5 million of the $100.5 million advanced, representing 95% of the estimated shares to be repurchased under the ASR agreement. In February 2016, the November 2015 ASR was settled and Teledyne received 135,374 shares of common stock.

The up-front payments were accounted for as a reduction to stockholders' equity in the Company's Consolidated Balance Sheet in the period the payments were made. The total number of shares of common stock repurchased under each ASR is based on the average of the daily volume-weighted average prices of the common stock during the term of the respective ASR, less a discount. At settlement, the ASR Counterparty may be required to deliver additional shares of the Company's common stock to the Company or, under certain circumstances, the Company may be required to deliver shares of its common stock or make a cash payment to the ASR Counterparty. The Company has treated the ASRs as a treasury share repurchase of common stock in the period the shares were delivered for purposes of calculating earnings per share and as a forward contract indexed to its own common stock. The ASRs meet all of the applicable criteria for equity classification, and, therefore, is not accounted for as a derivative instrument.

In 2015, the Company spent $243.8 million to repurchase a total of 2,561,815 shares of its common stock. In 2014, the Company spent $146.6 million to repurchase a total of 1,396,290 shares of its common stock under the ASR agreement, as well as the open market purchases. Teledyne has 2,587,103 shares of treasury stock at January 1, 2017.

On January 26, 2016, the Company's Board of Directors authorized an additional stock repurchase program authorizing the Company to repurchase up to an additional 3,000,000 shares of its common stock. The 2015 and 2016 stock repurchase authorizations are expected to remain open continuously, with respect to the shares remaining thereunder, and the number of shares repurchased will depend on a variety of factors, such as share price, levels of cash and borrowing capacity available, alternative investment opportunities available immediately or longer-term, and other regulatory, market or economic conditions. Future repurchases are expected to be funded with cash on hand and borrowings under the Company's credit facility. No repurchases were made in 2016.

Preferred Stock

Authorized preferred stock may be issued with designations, powers and preferences designated by the Board of Directors. There were no shares of preferred stock issued or outstanding in 2016, 2015 or 2014.

Stock Incentive Plan

Teledyne has long-term incentive plans which provide its Board of Directors the flexibility to grant restricted stock, restricted stock units, performance shares, non-qualified stock options, incentive stock options and stock appreciation rights to officers and employees of Teledyne. Employee stock options become exercisable in one-third increments on the first, second and third anniversary of the grant and have a maximum 10-year life.

Until January 1, 2015, Teledyne also sponsored a stock plan for non-employee directors pursuant to which non-employee directors received annual stock options and received stock or stock options in lieu of their respective retainer and meeting fees. The stock options became exercisable one year after issuance and have a maximum 10-year life.

No stock options were granted in 2015. Stock option compensation expense is recorded on a straight line basis over the appropriate vesting period, generally three years. The Company recorded $11.6 million, $12.2 million, and $14.0 million for stock option expense, for 2016, 2015 and 2014, respectively. The Company issues shares of common stock upon the exercise of stock options. On January 24, 2017, the Company granted 544,530 stock options to its employees at an exercise price of $123.38 per share.

The total pretax intrinsic value of options exercised during 2016 and 2015 (which is the amount by which the stock price exceeded the exercise price of the options on the date of exercise) was $36.6 million and $19.3 million, respectively. At January 1, 2017, the intrinsic value of stock options outstanding was $114.3 million and the intrinsic value of stock options exercisable was $88.0 million. During 2016 and 2015, the amount of cash received from the exercise of stock options was $36.1 million and $19.0 million, respectively.

At January 1, 2017, there was $11.9 million of total unrecognized compensation cost related to non-vested stock option awards which is expected to be recognized over a weighted-average period of 1.3 years.

The fair value of stock options is determined by using a lattice-based option pricing model. The Company uses a combination of its historical stock price volatility and the volatility of exchange traded options, if any, on the Company stock to compute the expected volatility for purposes of valuing stock options granted. The period used for the historical stock price corresponded to the expected term of the options. The period used for the exchange traded options, if any, included the longest-dated options publicly available, generally three months. The expected dividend yield is based on Teledyne's practice of not paying dividends. The risk-free rate of return is based on the yield of U.S. Treasury Strips with terms equal to the expected life of the options as of the grant date. The expected life in years is based on historical actual stock option exercise experience.

Stock option valuation assumptions:	**2016**	**2014**
Expected dividend yield	—	—
Expected volatility	32.7%	30.7%
Risk-free interest rate	1.5%	1.7%
Expected life in years	7.2	7.4

Based on the assumptions used in the valuation of stock options, the grant date weighted average fair value of stock options granted in 2016 and 2014 was $29.95 and $36.19, respectively.

Stock option transactions for Teledyne's stock option plans are summarized as follows:

	2016		**2015**		**2014**	
	Shares	**Weighted Average Exercise Price**	**Shares**	**Weighted Average Exercise Price**	**Shares**	**Weighted Average Exercise Price**
Beginning balance	**2,383,870**	**$ 63.74**	2,850,877	$ 62.37	2,743,753	$ 52.74
Granted	**520,310**	**$ 78.46**	—	$ —	612,018	$ 93.85
Exercised	**(687,018)**	**$ 52.54**	(386,679)	$ 49.13	(424,255)	$ 43.18
Canceled or expired	**(41,720)**	**$ 82.49**	(80,328)	$ 85.26	(80,639)	$ 74.70
Ending balance	**2,175,442**	**$ 70.44**	2,383,870	$ 63.74	2,850,877	$ 62.37
Options exercisable at end of period	**1,530,847**	**$ 65.52**	1,907,126	$ 57.61	1,787,364	$ 49.30

The following table provides certain information with respect to stock options outstanding and stock options exercisable at January 1, 2017, under the stock option plans:

	Stock Options Outstanding			**Stock Options Exercisable**	
Range of Exercise Prices	**Shares**	**Weighted Average Exercise Price**	**Remaining life in years**	**Shares**	**Weighted Average Exercise Price**
$15.53-$20.00	966	$ 15.53	2.2	966	$ 15.53
$20.01-$30.00	19,085	$ 26.03	3.2	19,085	$ 26.03
$30.01-$40.00	61,666	$ 35.60	1.8	61,666	$ 35.60
$40.01-$50.00	388,319	$ 45.20	3.8	388,319	$ 45.20
$50.01-$60.00	112,973	$ 51.60	1.5	112,973	$ 51.60
$60.01-$70.00	267,123	$ 64.67	5.4	267,123	$ 64.67
$70.01-$90.00	872,768	$ 77.02	7.9	378,408	$ 75.21
$90.01-$95.74	452,542	$ 94.24	7.3	302,307	$ 94.24
	2,175,442	$ 70.44	6.2	1,530,847	$ 65.52

Performance Shares

Teledyne's Performance Share Plan ("PSP") provides grants of performance share units, which key officers and executives may earn if Teledyne meets specified performance objectives over a three-year period. Awards are payable in cash and to the extent available, shares of Teledyne common stock. Awards are generally paid to the participants in three annual installments after the end of the performance cycle so long as they remain employed by Teledyne (with an exception for retirement). Participants in the performance share program may elect to pay taxes due with respect to an installment payment with awarded cash, by reducing the number of awarded shares, or a combination thereof.

In January 2009, the performance cycle for the three-year period ending January 1, 2012, was set. Based on the performance over the three-year period, at January 1, 2012, up to 109,557 shares were calculated to be issued in three equal installments during 2012, 2013 and 2014. The first installment in 2012 was paid entirely in cash based upon the then current market price of $55.58 per share multiplied by 36,531 shares that would have been issued. In 2013, the Company issued 23,519 shares for the second installment. For the third and final installment in 2014, the Company issued 19,742 shares.

In February 2012, the performance cycle for the three-year period ending December 31, 2014, was set. Under the plan, and based on actual performance, the number of shares that could be issued in three equal installments in 2015, 2016 and 2017, was 22,981. This amount has been reduced by forfeitures to 7,921. In 2015, the Company issued 1,944 shares. In 2016, the Company issued 864 shares and a maximum of 1,883 remain to be issued at January 1, 2017.

In February 2015, the performance cycle for the three-year period ending December 31, 2017, was set. Under the plan, the target number of shares that could be issued in three equal installments in 2018, 2019 and 2020, is 46,821. The maximum number of shares that could be issued in three equal installments in 2018, 2019 and 2020, is 93,642.

The calculated expense for each plan year was based on the expected cash payout and the expected shares to be issued, valued at the share price at the inception of the performance cycle, except for the shares that can be issued based on a market comparison. The expected expense for these shares was calculated using a Monte-Carlo type simulation which takes into consideration several factors including volatility, risk free interest rates and correlation of Teledyne's stock price with the comparator, the Russell 2000 Index. No adjustment to the calculated expense for the shares issued based on a market based comparison will be made regardless of the actual performance. The Company recorded $2.1 million, $2.3 million and $6.2 million in compensation expense related to the PSP program for fiscal years 2016, 2015 and 2014, respectively.

Restricted Stock

Under Teledyne's restricted stock award program selected officers and key executives receive a grant of stock equal to a specified percentage of the participant's annual base salary at the date of grant. The restricted stock is subject to transfer and forfeiture restrictions during an applicable "restricted period". The restrictions have both time-based and performance-based components. The restricted period expires (and the restrictions lapse) on the third anniversary of the date of grant, subject to the achievement of stated performance objectives over a specified three-year performance period. If employment is terminated (other than by death, retirement or disability) during the restricted period, stock is forfeited.

The calculated expense for restricted stock awards to employees is based on a Monte-Carlo type simulation which takes into consideration several factors including volatility, risk free interest rates and the correlation of Teledyne's stock price with the comparator, the Russell 2000 Index. No adjustment to the calculated expense will be made regardless of actual performance. The Company recorded $2.7 million, $2.6 million and $2.8 million in compensation expense related to restricted stock awards, for fiscal years 2016, 2015 and 2014, respectively. At January 1, 2017, there was $2.6 million of total estimated unrecognized compensation cost related to non-vested awards which is expected to be recognized over a weighted-average period of approximately 1.3 years.

The following table shows restricted stock award activity for grants made to employees:

Restricted stock:	Shares	Weighted average fair value per share
Balance, December 29, 2013	129,283	$ 52.31
Granted	37,688	$ 88.05
Issued	(40,197)	$ 37.22
Forfeited/Canceled	(18,048)	$ 56.68
Balance, December 28, 2014	108,726	$ 69.55
Granted	34,054	$ 92.74
Issued	(29,642)	$ 51.38
Forfeited/Canceled	(13,502)	$ 82.33
Balance, January 3, 2016	**99,636**	**$ 81.15**
Granted	**35,364**	**$ 72.91**
Issued	**(39,357)**	**$ 67.15**
Forfeited/Canceled	**(339)**	**$ 79.93**
Balance, January 1, 2017	**95,304**	**$ 83.87**

Beginning with the 2015 Annual Meeting, non-employee directors each receive restricted stock units valued at $110,000 (or valued at $55,000 for a person who becomes a director for the first time after the date of the Annual Meeting). The restricted stock units generally vest one year following the date of grant and are settled in shares of common stock on the date of vesting unless a director has elected to defer settlement of the award until his or her separation from Board service. In 2016, we issued 10,305 restricted stock units to non-employee directors. In 2015, we issued 9,534 restricted stock units to non-employee directors. The expense related to non-employee restricted stock grants was approximately $1.0 million for both 2016 and 2015.

From time to time, Teledyne also grants restricted stock units to employees, with immaterial grants prior to fiscal year fiscal year 2016. In December 2016, Teledyne granted 16,045 restricted stock units with a grant date fair value of $2.0 million to Teledyne's Chief Executive Officer, which vest in equal annual installments over three years. The calculated expense for restricted stock units is based on the market price of a share of Teledyne common stock at the period end date, which is recognized over the vesting period. At January 1, 2017, there are 31,350 restricted stock units outstanding.

Note 9. Long-Term Debt

At January 1, 2017, Teledyne had $509.7 million in long-term debt outstanding. At January 3, 2016, Teledyne had $754.1 million in long-term debt outstanding.

In December 2016, the Company entered into an amendment relating to term loans of $182.5 million in aggregate principal amount (the "Term Loans") to extend the maturity date of the Term Loans from March 1, 2019 to January 31, 2022 and extending the date on which amortization of principal begins; and generally lowering the applicable rate for base rate and Eurocurrency loans. The other material terms of the Term Loans, including covenants, remain unchanged. In November 2015, the Company issued $125.0 million in aggregate principal amount of senior unsecured notes. The notes consisted of $25.0 million of 2.81% senior unsecured notes due in November 2020, and $100.0 million of 3.28% senior unsecured notes due in November 2022. In December 2015, the Company amended the $750.0 million credit facility ("credit facility") to extend the maturity from March 2018 to December 2020. The other material terms of the credit facility, including covenants, remain unchanged. Excluding interest and fees, no payments are due under the credit facility until it matures. The credit agreements require the Company to comply with various financial and operating covenants, including maintaining certain consolidated leverage and interest coverage ratios. Borrowings under our credit facility and term loans are at variable rates which are, at our option, tied to a Eurocurrency rate equal to LIBOR (London Interbank Offered Rate) plus an applicable rate or a base rate as defined in our credit agreements. Eurocurrency rate loans may be denominated in U.S. dollars or an alternative currency as defined in the agreement. Eurocurrency or LIBOR-based loans under the facility typically have terms of one, two, three or six months and the interest rate for each such loan is subject to change if the loan is continued or converted following the applicable maturity date. The Company has not drawn any loans with a term longer than three months under the credit facility. Base rate loans have interest rates that primarily fluctuate with changes in the prime rate. Interest rates are also subject to change based on our consolidated leverage ratio as defined in the credit agreement. The credit agreement also provides for facility fees that vary between 0.12% and 0.25% of the credit line, depending on our consolidated leverage ratio as calculated from time to time.

Teledyne also has a $5.0 million uncommitted credit line which permits credit extensions up to $5.0 million plus an incremental $2.0 million solely for standby letters of credit. This credit line is utilized, as needed, for periodic cash needs. There was $3.5 million in outstanding funding advances under the uncommitted credit line at January 1, 2017 and no amounts outstanding at January 3, 2016. The Company also has $7.4 million outstanding under capital leases, of which $1.3 million is current. At year-end 2016, Teledyne had $15.5 million in outstanding letters of credit.

Available borrowing capacity under the $750.0 million credit facility, which is reduced by borrowings and certain outstanding letters of credit, was $735.5 million at January 1, 2017; noting, however, that Teledyne has committed to have remain available for borrowing up to $410.0 million under this facility to fund the pending e2v acquisition. The credit agreement and term loans requires the Company to comply with various financial and operating covenants and at January 1, 2017, the Company was in compliance with these covenants. In connection with the agreement to acquire e2v, in December 2016, Teledyne, together with certain of its subsidiaries as guarantors, has entered into a £625.0 million bridge credit facility (the "Bridge Facility") to fund the acquisition and related transaction costs, in order to meet the requirement under the U.K. City Code on Takeovers and Mergers that we have sufficient and certain resources available to fund the consideration for the acquisition.. The lenders under the Bridge Facility are committed to lend up to £345.0 million to fund the acquisition, No amounts have been drawn against the Bridge Facility to date.

Total interest expense including credit facility fees and other bank charges was $23.6 million in 2016, $24.0 million in 2015 and $19.1 million in 2014.

Teledyne estimates the fair value of its long-term debt based on debt of similar type, rating and maturity and at comparable interest rates. The Company's long-term debt was considered a level 2 fair value hierarchy and is valued based on observable market data. The estimated fair value of Teledyne's long-term debt at January 1, 2017, and January 3, 2016, approximated the carrying value.

Long-Term Debt (in millions):	**January 1, 2017**	**January 3, 2016**
$750.0 million revolving credit facility, due December 2020, weighted average rate of 1.67% at January 3, 2016	**$ —**	$ 150.5
Term Loans due through January 2022, weighted average rate of 1.90% at January 1, 2017, and 1.55% at January 3, 2016	**182.5**	190.0
4.74% Fixed Rate Senior Notes due September 2017	**100.0**	100.0
2.61% Fixed Rate Senior Notes due December 2019	**30.0**	30.0
5.30% Fixed Rate Senior Notes due September 2020	**75.0**	75.0
2.81% Fixed Rate Senior Notes due November 2020	**25.0**	25.0
3.09% Fixed Rate Senior Notes due December 2021	**95.0**	95.0
3.28% Fixed Rate Senior Notes due November 2022	**100.0**	100.0
Other debt	**4.2**	—
Total long-debt	**611.7**	765.5
Current portion of long-term debt and debt issue costs	**(102.0)**	(11.4)
Total long-term debt, net of current portion	**$ 509.7**	$ 754.1

No minimum principal payments on the $750.0 million revolving credit facility are required until December 2020. The Company began making quarterly minimum principal payments on the $200.0 million term loans in 2015. Future minimum principal payments on long-term debt are as follows: 2017 - $100.7 million; - 2018 - $1.1 million; 2019 - $34.6 million; 2020 - $108.6 million; 2021 - $102.4 million; 2022 and beyond - $264.3 million. The Company has no sinking fund requirements.

Note 10. Income Taxes

Income before income taxes included income from domestic operations of $195.2 million for 2016, $213.8 million for 2015 and $221.4 million for 2014. Income before taxes included income from foreign operations of $46.1 million for 2016, $44.4 million for 2015 and $60.7 million for 2014.

Income tax provision (benefit) - in millions:	**2016**	**2015**	**2014**
Current			
Federal	**$ 43.0**	$ 54.4	$ 57.4
State	**3.9**	5.3	(1.1)
Foreign	**3.4**	4.0	9.3
Total current	**50.3**	63.7	65.6
Deferred			
Federal	**4.3**	3.5	(0.2)
State	**(4.8)**	(2.5)	1.0
Foreign	**0.6**	(2.0)	0.1
Total deferred	**0.1**	(1.0)	0.9
Provision for income taxes	**$ 50.4**	$ 62.7	$ 66.5

The following is a reconciliation of the statutory federal income tax rate to the actual effective income tax rate:

Tax rate reconciliation:	**2016**	**2015**	**2014**
U.S. federal statutory tax rate	**35.0%**	35.0%	35.0%
State and local taxes, net of federal benefit	**1.6**	1.9	2.5
Research and development tax credits	**(2.0)**	(3.4)	(3.3)
Investment tax credits	**(1.8)**	(1.2)	(1.9)
Qualified production activity deduction	**(1.6)**	(2.2)	(2.0)
Foreign rate differential	**(2.7)**	(2.1)	(3.7)
Net reversals for unrecognized tax benefits	**(1.5)**	(2.1)	(1.4)
Stock-based compensation (ASU 2016-09)	**(3.5)**	—	—
Other	**(2.6)**	(1.6)	(1.6)
Effective income tax rate	**20.9%**	24.3%	23.6%

Deferred income taxes result from temporary differences in the recognition of income and expense for financial and income tax reporting purposes, and differences between the fair value of assets acquired in business combinations accounted for as purchases for financial reporting purposes and their corresponding tax bases. Deferred income taxes represent future tax benefits or costs to be recognized when those temporary differences reverse.

The categories of assets and liabilities that have resulted in differences in the timing of the recognition of income and expense were as follows (in millions):

Deferred income tax assets:	**2016**	**2015**
Long-term:		
Accrued liabilities	**$ 36.4**	$ 31.3
Inventory valuation	**17.7**	17.3
Accrued vacation	**10.7**	10.5
Deferred compensation and other benefit plans	**24.5**	16.8
Postretirement benefits other than pensions	**4.6**	4.8
Tax credit and net operating loss carryforward	**47.7**	49.1
Valuation allowance	**(16.9)**	(18.8)
Total deferred income tax assets	**124.7**	111.0
Deferred income tax liabilities:		
Long-term:		
Property, plant and equipment differences	**30.6**	26.5
Intangible amortization	**110.7**	111.6
Other	**4.8**	3.3
Total deferred income tax liabilities	**146.1**	141.4
Net deferred income tax liabilities	**$ 21.4**	$ 30.4

We intend to indefinitely reinvest the earnings of our material foreign subsidiaries in our operations outside of the United States. The cash that the Company's foreign subsidiaries hold for indefinite reinvestment is generally used to finance foreign operations and investments, including acquisitions. We estimate that future domestic cash generation will be sufficient to meet future domestic cash requirements. At January 1, 2017, the amount of undistributed foreign earnings was $226.6 million, of which we have not recorded a deferred tax liability of approximately $59.0 million. Should we decide to repatriate the foreign earnings, we would need to adjust our income tax provision in the period we determined that the earnings will no longer be indefinitely invested outside the United States.

In assessing the need for a valuation allowance, we consider all positive and negative evidence, including recent financial performance, scheduled reversals of temporary differences, projected future taxable income, availability of taxable income in carryback periods and tax planning strategies. Based on a review of such information, management believes that it is possible that some portion of deferred tax assets will not be realized as a future benefit and therefore has recorded a valuation allowance. The valuation allowance for deferred tax assets decreased by $1.9 million in 2016, primarily related to the utilization of investment tax credit and net operating loss carryforward and evidence for future utilization of the remaining investment tax credit and net operating loss carryforwards.

At January 1, 2017, the Company had approximately $49.9 million of net operating loss carryforward from foreign entities primarily from the Company's Danish entity, which has no expiration date. The Company had foreign capital loss carryforward in the amount of $4.0 million which has no expiration date. Also the Company had aggregate Canadian federal and provincial investment tax credits of $26.1 million, which have expiration dates of 2029 to 2037. In addition, the Company had domestic federal and state net operating loss carryforward of $5.0 million and $112.8 million, respectively. Generally, federal net operating loss carryforward amounts are limited in their use by earnings of certain acquired subsidiaries, and have expiration dates ranging from 2030 to 2036 and the state net operating loss carryforward amounts have expiration dates ranging from 2017 to 2036. Finally, the Company had federal research and development credit carryforward in the amount of $1.4 million which will expire between 2032 and 2035 and state tax credits of $9.9 million, of which $8.1 million have no expiration date and $1.8 million have expiration dates ranging from 2017 to 2032. The Company also had foreign tax credit carryforward in the amount of $0.4 million with an expiration date of 2022.

Unrecognized tax benefits (in millions):	2016	2015	2014
Beginning of year	**$ 28.8**	$ 32.3	$ 35.4
Increase in prior year tax positions (a)	**1.6**	2.1	4.3
Increase for tax positions taken during the current period	**1.6**	1.6	0.9
Reduction related to settlements with taxing authorities	**—**	(1.5)	(2.8)
Reduction related to lapse of the statute of limitations	**(7.5)**	(5.0)	(4.8)
Impact of exchange rate changes	**—**	(0.7)	(0.7)
End of year	**$ 24.5**	$ 28.8	$ 32.3

a) Includes the impact of acquisitions in all years.

The Company anticipates the total unrecognized tax benefit for various federal, state and foreign tax items may be reduced by $8.3 million due to the expiration of statutes of limitation for various federal, state and foreign tax issues in the next 12 months.

We recognized net tax benefits for interest and penalties related to unrecognized tax benefits within the provision for income taxes in our statements of operations of $0.2 million, $0.6 million and $0.2 million, for 2016, 2015 and 2014, respectively. Interest and penalties in the amount of $1.9 million, $2.1 million and $2.9 million were recognized in the 2016, 2015 and 2014 statement of financial position, respectively. Substantially all of the unrecognized tax benefits as of January 1, 2017, if recognized would affect our effective tax rate.

We file income tax returns in the United States federal jurisdiction and in various states and foreign jurisdictions. The Company has substantially concluded on all U.S. federal income tax matters for all years through 2012, California income tax matters for all years through 2011 and Canadian income tax matters for all years through 2008.

Note 11. Pension Plans and Postretirement Benefits

Pension Plans

Teledyne has a defined benefit pension plan covering substantially all U.S. employees hired before January 1, 2004, or approximately 16% of Teledyne's active employees. As of January 1, 2004, new hires participate in a defined contribution plan only. The Company also has several smaller domestic qualified and foreign-based defined benefit pension plans.

Teledyne's domestic pension income was $3.0 million in 2016, compared with pension expense of $2.0 million in 2015 and pension income of $1.7 million in 2014. In the first quarter of 2015, Teledyne froze its non-qualified pension plan for top executives which resulted in a one-time gain of $1.2 million. In accordance with U.S. Government Cost Accounting Standards ("CAS"), $13.8 million was recoverable from certain government contracts, for each of 2016, 2015 and 2014. Teledyne did not make any cash contributions to its domestic qualified pension plan since 2013. In 2017, we are not required, and are not planning, to make any cash contributions to the domestic qualified pension plan.

In June and December 2016, the Company's U.S. domestic qualified pension plan purchased group annuity contracts from two insurance companies and paid a total annuity premium of $27.2 million. These annuity contracts transfer the obligation to these insurance companies to guarantee the full payment of all annuity payments to approximately 1,193 existing retired pension plan participants or their surviving beneficiaries. These annuity contracts assume all investment risk associated with the assets that were delivered as the annuity contract premiums.

In 2014, the Company offered lump-sum payments out of the domestic qualified pension plan to certain plan participants whose employment with Teledyne had terminated. Additionally, the domestic qualified pension plan was amended in 2015 to allow participants who retire in the future to elect a lump-sum payment. In 2016 and 2015, the Company made lump sum payments of approximately $14.6 million and $10.5 million, respectively, from the domestic qualified pension plan assets to certain participants in the plan as a result of these lump sum offers. Each year beginning with 2014, the Society of Actuaries released revised mortality tables, which updated life expectancy assumptions. In consideration of these tables, we updated the mortality assumptions used in determining our pension and post-retirement obligations. The impact of these mortality assumptions increased our pension obligation and increased future pension expense.

The Company's contributions associated with its 401(k) plans were $9.3 million, $10.1 million and $9.5 million, for 2016, 2015 and 2014, respectively.

Net periodic benefit (income) expense - in millions:	Domestic			Foreign		
	2016	2015	2014	2016	2015	2014
Service cost - benefits earned during the period	**$ 10.4**	$ 12.4	$ 11.7	**$ 0.8**	$ 0.9	$ 0.8
Interest cost on benefit obligation	**38.9**	37.8	40.3	**1.6**	1.7	2.2
Expected return on plan assets	**(72.9)**	(74.4)	(73.7)	**(2.2)**	(2.2)	(2.6)
Amortization of prior service cost	**(6.0)**	(6.0)	(4.6)	**—**	—	—
Amortization of actuarial loss	**26.6**	33.4	24.6	**0.6**	0.6	—
Curtailment	**—**	(1.2)	—	**—**	—	—
Net periodic benefit (income) expense	**$ (3.0)**	$ 2.0	$ (1.7)	**$ 0.8**	$ 1.0	$ 0.4

The expected long-term rate of return on plan assets is reviewed annually, taking into consideration the Company's asset allocation, historical returns on the types of assets held, and the current economic environment. We determined the discount rate based on a model which matches the timing and amount of expected benefit payments to maturities of high-quality corporate bonds priced as of the pension plan measurement date. The yields on the bonds are used to derive a discount rate for the obligation.

The following assumptions were used to measure the net benefit income/cost within each respective year:

Pension Plan Assumptions:	Weighted average discount rate	Weighted average increase in future compensation levels	Expected weighted-average long-term rate of return
Domestic plan - 2016	4.91%	2.75%	8.00%
Domestic plan - 2015	4.50%	2.75%	8.25%
Domestic plan - 2014	5.40%	2.75%	8.25%
Foreign plans 2016	0.90% - 3.60%	1.00% - 2.43%	1.40% - 6.50%
Foreign plans 2015	1.20% - 3.50%	1.30% - 2.40%	1.80% - 6.40%
Foreign plans 2014	2.10% - 4.30%	1.75% - 2.50%	3.00% - 6.40%

For its domestic pension plans the Company is projecting a long-term rate of return on plan assets of 8.00% in 2017. For its foreign based pension plans the Company is projecting a long-term rate of return on plan assets will range from 1.00% to 5.90% in 2017.

	Domestic		Foreign	
	2016	2015	2016	2015
Changes in benefit obligation (in millions):				
Benefit obligation - beginning of year	**$ 820.4**	$ 878.4	**$ 56.6**	$ 61.1
Service cost - benefits earned during the year	**10.4**	12.4	**0.8**	0.9
Interest cost on projected benefit obligation	**38.9**	37.8	**1.6**	1.7
Actuarial (gain) loss	**29.5**	(33.8)	**6.2**	(0.9)
Benefits paid(a)	**(88.3)**	(57.2)	**(1.8)**	(2.8)
Plan amendments(b)	**—**	(17.0)	**(0.3)**	(0.2)
Settlements/curtailments	**—**	—	**(4.6)**	—
Other - including foreign currency	**—**	(0.2)	**(7.1)**	(3.2)
Benefit obligation - end of year	**$ 810.9**	$ 820.4	**$ 51.4**	$ 56.6
Accumulated benefit obligation - end of year	**$ 807.3**	$ 817.8	**$ 49.1**	$ 53.7

(a) The 2016 and 2015 amounts include lump sum payments to certain participants of $14.6 million and $10.5 million, respectively. In addition, in 2016, the Company's U.S. domestic qualified pension plan purchased group annuity contracts from two insurance companies and paid a total annuity premium of $27.2 million.

(b) The $17.0 million amount reflects the impact of actions taken in 2015 whereby Teledyne amended the domestic qualified pension plan to allow participants to elect a lump-sum payment form upon retirement.

The key assumptions used to measure the benefit obligation at each respective year-end were:

Key assumptions:	Domestic Plan			Foreign Plans		
	2016	2015	2014	2016	2015	2014
Discount rate	4.54%	4.91%	4.50%	0.60% - 2.50%	0.90% - 3.60%	1.20% - 3.50%
Salary growth rate	2.75%	2.75%	2.75%	1.00% - 2.30%	1.00% - 2.40%	1.70% - 2.40%

	Domestic		Foreign	
	2016	2015	2016	2015
Changes in plan assets (in millions):				
Fair value of net plan assets - beginning of year	**$ 890.4**	$ 957.5	**$ 43.8**	$ 47.6
Actual return on plan assets	**52.9**	(12.1)	**5.8**	0.7
Employer contribution - other benefit plan	**2.1**	2.2	**3.4**	0.7
Foreign currency changes	**—**	—	**(5.9)**	(2.4)
Benefits paid	**(88.3)**	(57.2)	**(1.8)**	(2.8)
Other	**—**	—	**(3.2)**	—
Fair value of net plan assets - end of year	**$ 857.1**	$ 890.4	**$ 42.1**	$ 43.8

The measurement date for the Company's pension plans is December 31.

The following table sets forth the funded status and amounts recognized in the consolidated balance sheets at year-end 2016 and 2015 for the domestic qualified and nonqualified pension plans and the foreign-based pension plans for benefits provided to certain employees (in millions):

	Domestic		Foreign	
	2016	2015	2016	2015
Funded status	**$ 46.2**	$ 70.0	**$ (9.3)**	$ (12.8)
Amounts recognized in the consolidated balance sheets:				
Prepaid pension asset long-term	**$ 88.5**	$ 111.0	**$ —**	$ —
Accrued pension obligation long-term	**(34.5)**	(33.8)	**(9.3)**	(12.8)
Accrued pension obligation short-term	**(2.6)**	(2.2)	**—**	—
Other long-term liabilities	**(5.2)**	(5.0)	**—**	—
Net amount recognized	**$ 46.2**	$ 70.0	**$ (9.3)**	$ (12.8)
Amounts recognized in accumulated other comprehensive loss:				
Prior service credit	**$ (30.7)**	$ (36.7)	**$ (0.5)**	$ (0.3)
Net loss	**421.5**	398.6	**10.3**	13.0
Net amount recognized, before tax effect	**$ 390.8**	$ 361.9	**$ 9.8**	$ 12.7

Amounts for pension plans with accumulated benefit obligations in excess of fair value of plan assets are as follows (in millions):

	2016	2015
Projected benefit obligation	**$ 93.7**	$ 97.6
Accumulated benefit obligation	**$ 91.4**	$ 94.7
Fair value of plan assets	**$ 42.1**	$ 43.8

At year-end 2016 and 2015 the Company had an accumulated non-cash reduction to stockholders' equity of $249.6 million and $232.3 million, respectively, related to its pension and postretirement plans. The accumulated non-cash reductions to stockholders' equity did not affect net income and were recorded net of accumulated deferred taxes of $147.3 million at year end 2016 and $138.0 million at year end 2015.

At January 1, 2017, the estimated amounts of the minimum liability adjustment that are expected to be recognized as components of net periodic benefit cost during 2017 for the pension plans are: net loss $29.2 million and net prior service credit $6.1 million.

Estimated future pension plan benefit payments (in millions):	Domestic	Foreign
2017	$ 56.9	$ 2.2
2018	57.7	2.0
2019	58.0	1.8
2020	57.8	2.0
2021	58.6	1.8
2022-2026	295.9	10.5
Total	$ 584.9	$ 20.3

The following table sets forth the percentage of year-end market value by asset class for the pension plans:

Market value by asset class:	Domestic Plan Assets % to Total		Foreign Plan Assets % to Total	
	2016	2015	2016	2015
Equity instruments	**57%**	59%	**75%**	75%
Fixed income instruments	**30**	29	**15**	15
Alternatives and other	**13**	12	**10**	10
Total	**100%**	100%	**100%**	100%

The Company has an active management policy for a portion of the pension assets in the domestic pension plan. The long term asset allocation target for the domestic plan consists of 70% in equity instruments including a portion in alternatives and 30% in fixed income instruments. The balance in equity instruments for the domestic plan can range from 45% to 75% before rebalancing is required under the Company's policy.

The pension plan's investments are stated at fair value. Plan investments that are considered a level 1 fair value hierarchy and are valued at quoted market prices in active markets. Plan investments that are considered a level 2 fair value hierarchy and are valued based on observable market data. Plan investments that would be considered a level 3 fair value hierarchy are valued based on management's own assumption about the assumptions that market participants would use in pricing the asset or liability (including assumptions about risk).

Certain investments measured at fair value using net asset values as a practical expedient are not required to be categorized in the fair value hierarchy table listed below. As such, the total fair value of these net asset values based investments has been included in the table below to permit reconciliation to the plan asset amounts previously disclosed.

The fair values of the Company's net pension assets, by fair value hierarchy, for both the U.S. and foreign pension plans as of January 1, 2017, by asset category are as follows (in millions):

Asset category:(a)	Level 1	Level 2	Level 3	Total
Cash and cash equivalents (b)	$ —	$ 39.5	$ —	$ 39.5
Equity securities	152.0	78.2	—	230.2
U.S. government securities and futures	46.2	0.1	—	46.3
Corporate bonds	—	84.8	—	84.8
Insurance contracts related to foreign plans	—	12.7	—	12.7
Fair value of net plan assets at the end of the year	$ 198.2	$ 215.3	$ —	$ 413.5

Investments measured at net asset value:	
Equity securities	$ 147.2
Alternatives	148.5
Mutual funds (c)	136.4
Corporate bonds	19.4
Senior secured loans	4.4
Mortgage-backed securities	16.5
High yield bonds	13.2
Fair value of net plan assets at the end of the year	$ 485.6

a) There were no transfers of plan assets between the three levels of the fair value hierarchy during the year.
b) Reflects cash and cash equivalents held in overnight cash investments.
c) 29% of mutual funds invest in fixed income types of securities; 71% invest in equity securities.

The fair values of the Company's net pension assets, by fair value hierarchy, for both the U.S. and foreign pension plans as of January 3, 2016, by asset category are as follows (in millions):

Asset category: (a)	Level 1	Level 2	Level 3	Total
Cash and cash equivalents (b)	$ —	$ 30.3	$ —	$ 30.3
Equity securities	185.5	69.4	—	254.9
U.S. government securities and futures	73.6	0.1	—	73.7
Corporate bonds	—	81.4	—	81.4
Insurance contracts related to foreign plans	—	14.8	—	14.8
Fair value of net plan assets at the end of the year	$ 259.1	$ 196.0	$ —	$ 455.1

Investments measured at net asset value:	
Equity securities	$ 180.9
Alternatives	110.9
Mutual funds (c)	135.2
Corporate bonds	20.4
Senior secured loans	4.0
Mortgage-backed securities	15.9
High yield bonds	11.7
Fair value of net plan assets at the end of the year	$ 479.0

(a) There were $15.3 million of transfers of plan assets between the three levels of the fair value hierarchy during the year.
(b) Reflects cash and cash equivalents held in overnight cash investments.
(c) 18% of mutual funds invest in fixed income types of securities; 82% invest in equity securities.

U.S. equities are valued at the closing price reported in an active market on which the individual securities are traded. U.S. equities and non-U.S. equities are also valued at the net asset value provided by the independent administrator or custodian of the commingled fund. The net asset value is based on the value of the underlying equities, which are traded on an active market. Corporate bonds are valued using inputs such as the closing price reported, if traded on an active market, values derived from comparable securities of issuers with similar credit ratings, or under a discounted cash flow approach that utilizes observable inputs, such as current yields of similar instruments. Fixed income investments are also valued at the net asset value provided by the independent administrator or custodian of the fund. The net asset value is based on the underlying assets, which are valued using inputs such as the closing price reported, if traded on an active market, values derived from comparable securities of issuers with similar credit ratings, or under a discounted cash flow approach that utilizes observable inputs, such as current yields of similar instruments. Alternative investments are primarily valued at the net asset value as determined by the independent administrator or custodian of the fund. The net asset value is based on the underlying investments, which are valued using inputs such as quoted market prices of identical instruments or values derived from comparable securities of issuers with similar credit ratings, or under a discounted cash flow approach that utilizes observable inputs, such as current yields of similar instruments.

Postretirement Plans

The Company sponsors several postretirement defined benefit plans covering certain salaried and hourly employees. The plans provide health care and life insurance benefits for certain eligible retirees.

Net period postretirement benefit cost (income) - in millions:	2016	2015	2014
Service cost - benefits earned during the period	**$ —**	$ —	$ —
Interest cost on benefit obligation	**0.5**	0.5	0.6
Amortization of prior service cost	**—**	—	(0.2)
Amortization of actuarial gain	**(0.4)**	(0.2)	(0.5)
Net periodic benefit (income) expense	**$ 0.1**	$ 0.3	$ (0.1)

	2016	2015
Changes in benefit obligation (in millions):		
Benefit obligation - beginning of year	**$ 10.7**	$ 12.8
Interest cost on projected benefit obligation	**0.5**	0.5
Actuarial gain	**0.1**	(1.3)
Benefits paid	**(1.5)**	(1.3)
Benefit obligation - end of year	**$ 9.8**	$ 10.7

The measurement date for the Company's postretirement plans is December 31.

Future postretirement plan benefit payments (in millions):	
2017	$ 1.1
2018	1.0
2019	1.0
2020	0.9
2021	0.9
2022-2026	3.5
Total	$ 8.4

The following table sets forth the funded status and amounts recognized in Teledyne's consolidated balance sheets for the postretirement plans at year-end 2016 and 2015 (in millions):

	2016	2015
Funded status:		
Funded status	**$ (9.8)**	$ (10.7)
Unrecognized net gain	**(3.8)**	(4.2)
Accrued benefit cost	**$ (13.6)**	$ (14.9)
Amounts recognized in the consolidated balance sheets:		
Accrued postretirement benefits (long-term)	**$ (8.7)**	$ (9.6)
Accrued postretirement benefits (short-term)	**(1.1)**	(1.1)
Accumulated other comprehensive income	**(3.8)**	(4.2)
Net amount recognized	**$ (13.6)**	$ (14.9)

At January 1, 2017, the amounts in the AOCI that have not yet been recognized as components of net periodic benefit income for the retiree medical plans are: net gain $3.8 million and net prior service credit of less than $0.1 million. At January 1, 2017, the estimated amortization from AOCI expected to be recognized as components of net periodic benefit income during 2017 for the retiree medical plans are: net gain $0.4 million and net prior service cost of less than $0.1 million.

The annual assumed rate of increase in the per capita cost of covered benefits (the health care cost trend rate) for health care plans is 6.5% in 2017 and was assumed to decrease to 5.0% by the year 2023 and remain at that level thereafter. Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one percentage point increase in the assumed health care cost trend rates would result in an increase in the annual service and interest costs by less than $0.1 million for 2016 and would result in an increase in the postretirement benefit obligation by $0.3 million at January 1, 2017. A one percentage point decrease in the assumed health care cost trend rates would result in a decrease in the annual service and interest costs by less than $0.1 million for 2016 and would result in a decrease in the postretirement benefit obligation by $0.3 million at January 1, 2017.

Note 12. Business Segments

The Company has four reportable segments: Instrumentation; Digital Imaging; Aerospace and Defense Electronics; and Engineered Systems. The Company manages, evaluates and aggregates its operating segments for segment reporting purposes primarily on the basis of product and service type, production process, distribution methods, type of customer, management organization, sales growth potential and long-term profitability. The Instrumentation segment provides monitoring and control instruments for marine, environmental, industrial and other applications, electronic test and measurement equipment and harsh environment interconnect products. The Digital Imaging segment includes high-performance sensors, cameras and systems, within the visible, infrared and X-ray spectra, for use in industrial, government and medical applications, as well as micro electro-mechanical systems ("MEMS"). It also includes our sponsored and centralized research laboratories benefiting government programs and businesses. The Aerospace and Defense Electronics segment provides sophisticated electronic components and subsystems and communications products, including defense electronics, harsh environment interconnects, data acquisition and communications equipment for aircraft and components and subsystems for wireless and satellite communications, as well as general aviation batteries. In the third quarter of 2016, Teledyne completed the disposition of the net assets of its PCT business for $9.3 million in cash resulting in no gain or loss. PCT, which was part of the Aerospace and Defense Electronics segment, had sales of $10.1 million, $16.6 million and $18.8 million for 2016, 2015 and 2014, respectively. For 2016, PCT reported a pretax loss of $3.1 million, compared with a pretax loss of $3.9 million in 2015 and pretax income of $1.1 million in 2014. The Engineered Systems segment provides innovative systems engineering and integration, advanced technology application, software development and manufacturing solutions for defense, space, environmental and energy applications. The Engineered Systems segment also designs and manufactures electrochemical energy systems and small turbine engines.

Segment results include net sales and operating income by segment but excludes noncontrolling interest, equity income or loss, unusual non-recurring legal matter settlements, interest income and expense, gains and losses on the disposition of assets, sublease rental income and non-revenue licensing and royalty income, domestic and foreign income taxes and corporate office expenses. Corporate expense includes various administrative expenses relating to the corporate office and certain nonoperating expenses not allocated to our segments.

As part of a continuing effort to reduce costs and improve operating performance the Company took actions to consolidate and relocate certain facilities and reduce headcount across various businesses, reducing our exposure to weak end markets and high cost locations.

The following pre-tax charges were incurred related to severance and facility consolidations (in millions):

	2016	2015	2014
Instrumentation	**$ 10.6**	$ 3.9	$ 1.0
Digital Imaging	**2.0**	3.2	2.7
Aerospace and Defense Electronics	**4.6**	1.2	0.9
Engineered Systems	**0.1**	0.1	(0.2)
Total	**$ 17.3**	$ 8.4	$ 4.4

At January 1, 2017, $3.7 million remains to be paid related to these actions.

Information on the Company's business segments was as follows (in millions):

Net sales:	2016	2015	2014
Instrumentation	**$ 876.7**	$ 1,051.1	$ 1,115.5
Digital Imaging	**398.7**	379.0	403.6
Aerospace and Defense Electronics	**615.9**	593.4	603.0
Engineered Systems	**258.6**	274.6	271.9
Total net sales	**$ 2,149.9**	$ 2,298.1	$ 2,394.0

Operating income:	2016	2015	2014
Instrumentation	**$ 109.8**	$ 171.0	$ 181.6
Digital Imaging	**45.9**	40.0	37.1
Aerospace and Defense Electronics	**112.1**	84.8	88.3
Engineered Systems	**32.1**	26.1	31.4
Corporate expense	**(46.1)**	(40.2)	(43.9)
Total operating income	**253.8**	281.7	294.5

Depreciation and amortization:	2016	2015	2014
Instrumentation	**$ 37.3**	$ 41.2	$ 41.1
Digital Imaging	**26.2**	26.1	29.6
Aerospace and Defense Electronics	**14.4**	15.0	15.9
Engineered Systems	**4.1**	3.5	3.7
Corporate	**5.3**	4.5	4.0
Total depreciation and amortization	**$ 87.3**	$ 90.3	$ 94.3

Capital expenditures:	2016	2015	2014
Instrumentation	**$ 50.9**	$ 20.9	$ 17.0
Digital Imaging	**12.5**	9.2	10.3
Aerospace and Defense Electronics	**12.6**	9.1	8.8
Engineered Systems	**5.9**	5.7	4.3
Corporate	**5.7**	2.1	3.1
Total capital expenditures	**$ 87.6**	$ 47.0	$ 43.5

Identifiable assets are those assets used in the operations of the segments. Corporate assets primarily consist of cash and cash equivalents, deferred taxes, net pension assets/liabilities and other assets.

Identifiable assets:	2016	2015	2014
Instrumentation	**$ 1,361.0**	$ 1,339.6	$ 1,415.4
Digital Imaging	**671.1**	634.9	708.4
Aerospace and Defense Electronics	**449.4**	451.6	462.5
Engineered Systems	**93.9**	92.2	84.9
Corporate (a)	**199.0**	198.8	191.0
Total identifiable assets	**$ 2,774.4**	$ 2,717.1	$ 2,862.2

(a) The amount for 2016, 2015 and 2014 includes $88.5 million, $111.0 million and $86.3 million prepaid pension asset, respectively.

Information on the Company's sales by country of origin and long-lived assets by major geographic area was as follows (in millions):

Sales by country:	2016	2015	2014
United States	**$ 1,653.6**	$ 1,805.4	$ 1,852.0
Canada	**209.2**	208.8	230.1
United Kingdom	**109.6**	124.6	139.8
All other countries	**177.5**	159.3	172.1
Total sales	**$ 2,149.9**	$ 2,298.1	$ 2,394.0

Long-lived assets:	2016	2015	2014
United States	**$ 1,408.1**	$ 1,332.5	$ 1,364.7
Canada	**273.5**	249.9	310.5
United Kingdom	**103.3**	127.3	120.6
All other countries	**138.1**	139.3	128.2
Total long-lived assets	**$ 1,923.0**	$ 1,849.0	$ 1,924.0

Long-lived assets consist of property, plant and equipment, goodwill, acquired intangible assets, prepaid pension assets and other long-term assets including deferred compensation assets but excluding any deferred tax assets. The all other countries category primarily consists of Teledyne's operations in Europe.

Product Lines

The Instrumentation segment includes three product lines: Environmental Instrumentation, Marine Instrumentation and Test and Measurement Instrumentation. All other segments each contain one product line.

The tables below provide a summary of the sales by product line for the Instrumentation segment (in millions):

Instrumentation:	**2016**	**2015**	**2014**
Environmental Instrumentation	**$ 270.1**	$ 268.7	$ 268.4
Marine Instrumentation	**418.7**	614.0	654.8
Test and Measurement Instrumentation	**187.9**	168.4	192.3
Total	**$ 876.7**	**$ 1,051.1**	**$ 1,115.5**

Sales to the U.S. Government included sales to the U.S. Department of Defense of $449.4 million in 2016, $447.2 million in 2015, and $472.8 million in 2014. Total sales to international customers were $919.4 million in 2016, $1,020.4 million in 2015, and $1,069.3 million in 2014. Of these amounts, sales by operations in the United States to customers in other countries were $539.4 million in 2016, $628.2 million in 2015, and $624.0 million in 2014. There were no sales to individual countries outside of the United States in excess of 10 percent of the Company's sales. Sales between business segments generally were priced at prevailing market prices and were $20.2 million, $19.4 million and $20.1 million for 2016, 2015 and 2014, respectively.

Note 13. Lease Commitments

Operating lease agreements, which include leases for manufacturing facilities and office space frequently include renewal options and require the Company to pay for utilities, taxes, insurance and maintenance expense. No lease agreement imposes a restriction on the Company's ability to engage in financing transactions or enter into further lease agreements.

At January 1, 2017, future minimum lease payments for capital leases and for operating leases with non-cancelable terms of more than one year were as follows (in millions):

Lease Commitments:	**Capital**	**Operating**
2017	$ 1.3	$ 18.1
2018	1.3	17.1
2019	1.4	14.6
2020	1.1	13.4
2021	1.1	12.3
Thereafter	2.2	55.9
Total minimum lease payments	8.4	$ 131.4
Less:		
Imputed interest	(1.0)	
Current portion	(1.3)	
Present value of minimum capital lease payments, net of current portion	$ 6.1	

The 2016 property, plant and equipment accounts included $10.1 million of property leased under capital leases and $5.2 million of related accumulated depreciation. The 2015 property, plant and equipment accounts included $11.8 million of property leased under capital leases and $6.4 million of related accumulated depreciation. Rental expense under operating leases, net of immaterial sublease income, was $28.1 million in 2016, $24.5 million in 2015 and $25.5 million in 2014.

Note 14. Commitments and Contingencies

The Company is subject to federal, state and local environmental laws and regulations which require that it investigate and remediate the effects of the release or disposal of materials at sites associated with past and present operations, including sites at which the Company has been identified as a potentially responsible party under the federal Superfund laws and comparable state laws.

In accordance with the Company's accounting policy disclosed in Note 2, environmental liabilities are recorded when the Company's liability is probable and the costs are reasonably estimable. In many cases, however, investigations are not yet at a stage where the Company has been able to determine whether it is liable or, if liability is probable, to reasonably estimate the loss or range of loss, or certain components thereof. Estimates of the Company's liability are further subject to uncertainties regarding the nature and extent of site contamination, the range of remediation alternatives available, evolving remediation

standards, imprecise engineering evaluations and estimates of appropriate cleanup technology, methodology and cost, the extent of corrective actions that may be required, and the number and financial condition of other potentially responsible parties, as well as the extent of their responsibility for the remediation. Accordingly, as investigation and remediation of these sites proceeds, it is likely that adjustments in the Company's accruals will be necessary to reflect new information. The amounts of any such adjustments could have a material adverse effect on the Company's results of operations in a given period, but the amounts, and the possible range of loss in excess of the amounts accrued, are not reasonably estimable. Based on currently available information, however, management does not believe that future environmental costs in excess of those accrued with respect to sites with which the Company has been identified are likely to have a material adverse effect on the Company's financial condition or liquidity.

At January 1, 2017, the Company's reserves for environmental remediation obligations totaled $7.0 million, of which $3.5 million is included in current accrued liabilities. The Company periodically evaluates whether it may be able to recover a portion of future costs for environmental liabilities from its insurance carriers and from third parties. The timing of expenditures depends on a number of factors that vary by site, including the nature and extent of contamination, the number of potentially responsible parties, the timing of regulatory approvals, the complexity of the investigation and remediation, and the standards for remediation. The Company expects that it will expend present accruals over many years, and will complete remediation of all sites with which it has been identified in up to thirty years.

Various claims (whether based on U.S. Government or Company audits and investigations or otherwise) may be asserted against the Company related to its U.S. Government contract work, including claims based on business practices and cost classifications and actions under the False Claims Act. Although such claims are generally resolved by detailed fact-finding and negotiation, on those occasions when they are not so resolved, civil or criminal legal or administrative proceedings may ensue. Depending on the circumstances and the outcome, such proceedings could result in fines, penalties, compensatory and treble damages or the cancellation or suspension of payments under one or more U.S. Government contracts. Under government regulations, a company, or one or more of its operating divisions or units, can also be suspended or debarred from government contracts based on the results of investigations. However, although the outcome of these matters cannot be predicted with certainty, management does not believe there is any audit, review or investigation currently pending against the Company of which management is aware that is likely to result in suspension or debarment of the Company, or that is otherwise likely to have a material adverse effect on the Company's financial condition or liquidity, although the resolution in any reporting period of one or more of these matters could have a material adverse effect on the Company's results of operations for that period.

A number of other lawsuits, claims and proceedings have been or may be asserted against the Company, including those pertaining to product liability, acquisitions, patent infringement, commercial contracts, employment and employee benefits. While the outcome of litigation cannot be predicted with certainty, and some of these lawsuits, claims or proceedings may be determined adversely to the Company, management does not believe that the disposition of any such pending matters is likely to have a material adverse effect on the Company's financial condition.

Note 15. Quarterly Financial Data (Unaudited)

Fiscal Year 2016 (a) (in millions, except per-share amounts)	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Net Sales	$ 530.5	$ 539.7	$ 526.8	$ 552.9
Costs and expenses				
Cost of sales	324.8	336.2	317.0	340.0
Selling, general and administrative expenses	144.8	149.9	141.0	142.4
Total costs and expenses	469.6	486.1	458.0	482.4
Operating income	60.9	53.6	68.8	70.5
Interest and debt expense, net	(5.7)	(5.9)	(5.6)	(6.0)
Other income, net (b)	(1.3)	17.2	(0.8)	(4.4)
Income before income taxes	53.9	64.9	62.4	60.1
Provision for income taxes (c)	14.9	18.0	10.4	7.1
Net income attributable to Teledyne	$ 39.0	$ 46.9	$ 52.0	$ 53.0
Basic earnings per common share	$ 1.13	$ 1.36	$ 1.50	$ 1.52
Diluted earnings per common share	$ 1.11	$ 1.33	$ 1.46	$ 1.48

a) Fiscal year 2016 was a 52-week year, each quarter contained 13 weeks. The Company's Form 10-Qs for the second and third quarters of 2016 classified our Printed Circuit Technology ("PCT") business, which was sold in July 2016, as discontinued operations. Based on further review we have determined that the sale and impact to the Company's operations were insignificant and therefore the results of PCT are no longer presented within discontinued operations.

b) The second quarter includes a $17.9 million pretax gain on the sale of a former operating facility and the fourth quarter includes $5.5 million in expense related to an option contract in connection with the pending e2v acquisition.

c) Includes $0.6 million in net discrete income tax benefits in the first quarter, $5.7 million in net discrete income tax expense in the second quarter, $6.6 million in net discrete income tax benefits the third quarter and $9.4 million in net discrete income tax benefits in the fourth quarter. The first and second quarters of 2016 were adjusted from the amounts previously reported on Form 10-Q as a result of adopting Accounting Standards Update No. 2016-09, Compensation - Stock Compensation (Topic 718), Improvements to Employee Share-Based Payment Accounting. Teledyne's first and second quarter previously reported results now include additional income tax benefits as an increase to net income of $0.6 million and $1.2 million, respectively. See Note 2 of our Notes to the Consolidated Financial Statements for additional information.

Fiscal Year 2016 (in millions)	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Net Sales:				
Instrumentation	$ 223.7	$ 220.1	$ 208.3	$ 224.6
Digital Imaging	89.9	99.4	98.5	110.9
Aerospace & Defense Electronics	152.6	158.0	153.5	151.8
Engineered Systems	64.3	62.2	66.5	65.6
Total net sales	$ 530.5	$ 539.7	$ 526.8	$ 552.9
Operating income:				
Instrumentation	$ 31.4	$ 20.1	$ 28.1	$ 30.2
Digital Imaging	8.2	10.7	11.7	15.3
Aerospace & Defense Electronics	24.1	28.0	31.5	28.5
Engineered Systems	8.0	5.6	8.6	9.9
Corporate expense	(10.8)	(10.8)	(11.1)	(13.4)
Total operating income	$ 60.9	$ 53.6	$ 68.8	$ 70.5

Fiscal Year 2015 (a) (in millions, except per-share amounts)	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Net Sales	$ 565.0	$ 577.7	$ 555.4	$ 600.0
Costs and expenses				
Cost of sales	345.9	357.7	345.8	378.4
Selling, general and administrative expenses	151.8	151.1	140.1	145.6
Total costs and expenses	497.7	508.8	485.9	524.0
Operating income	67.3	68.9	69.5	76.0
Interest and debt expense, net	(5.9)	(6.0)	(6.0)	(6.0)
Other income, net	0.8	3.4	(2.1)	(1.7)
Income before income taxes	62.2	66.3	61.4	68.3
Provision for income taxes (b)	18.5	18.3	13.1	12.8
Net income	43.7	48.0	48.3	55.5
Noncontrolling interest	—	0.3	—	—
Net income attributable to Teledyne	$ 43.7	$ 48.3	$ 48.3	$ 55.5
Basic earnings per common share	$ 1.22	$ 1.37	$ 1.37	$ 1.59
Diluted earnings per common share	$ 1.20	$ 1.34	$ 1.34	$ 1.57

a) Fiscal year 2015 was a 53-week year, each quarter contained 13 weeks except the fourth quarter which contained 14 weeks.

b) Includes $0.2 million in net discrete income tax expense in the first quarter of 2015, $1.3 million in net discrete income tax benefits in the second quarter, $7.4 million in net discrete income tax benefits in the third quarter and $1.3 million in net discrete income tax benefits in the fourth quarter.

Fiscal Year 2015 (in millions)	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Net Sales:				
Instrumentation	$ 270.3	$ 271.3	$ 243.2	$ 266.3
Digital Imaging	90.4	90.8	95.7	102.1
Aerospace & Defense Electronics	141.2	147.0	151.3	153.9
Engineered Systems	63.1	68.6	65.2	77.7
Total net sales	$ 565.0	$ 577.7	$ 555.4	$ 600.0
Operating income:				
Instrumentation	$ 42.1	$ 45.7	$ 38.6	$ 44.6
Digital Imaging	9.3	8.8	10.4	11.5
Aerospace & Defense Electronics	19.4	20.6	23.5	21.3
Engineered Systems	6.7	4.8	5.9	8.7
Corporate expense	(10.2)	(11.0)	(8.9)	(10.1)
Total operating income	$ 67.3	$ 68.9	$ 69.5	$ 76.0

Schedule II VALUATION AND QUALIFYING ACCOUNTS

Schedule II

VALUATION AND QUALIFYING ACCOUNTS

For the Fiscal Years Ended January 1, 2017, January 3, 2016 and December 28, 2014
(In millions)

Description	Balance at beginning of period	Additions: Charged to costs and expenses	Additions: Acquisitions	Deductions and other (a)	Balance at end of period
Fiscal 2016					
Allowance for doubtful accounts	$ 6.3	0.7	0.2	(2.0)	$ 5.2
Environmental reserves	$ 8.7	0.4	—	(2.2)	$ 6.9
Fiscal 2015					
Allowance for doubtful accounts	$ 7.8	0.9	0.3	(2.7)	$ 6.3
Environmental reserves	$ 9.7	0.6	—	(1.6)	$ 8.7
Fiscal 2014					
Allowance for doubtful accounts	$ 5.2	3.6	1.9	(2.9)	$ 7.8
Environmental reserves	$ 9.1	0.5	0.9	(0.8)	$ 9.7

(a) Represents payments except the amounts for allowance for doubtful accounts primarily represents uncollectible accounts written-off, net of recoveries.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized as of March 2, 2017.

Teledyne Technologies Incorporated (Registrant)

By: /s/ Robert Mehrabian

Robert Mehrabian
Chairman, President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

/s/ Robert Mehrabian Robert Mehrabian	Chairman, President and Chief Executive Officer (Principal Executive Officer) and Director	March 2, 2017
/s/ Susan L. Main Susan L. Main	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	March 2, 2017
/s/ Cynthia Belak Cynthia Belak	Vice President and Controller (Principal Accounting Officer)	March 2, 2017
* Roxanne S. Austin	Director	March 2, 2017
* Charles Crocker	Director	March 2, 2017
* Kenneth C. Dahlberg	Director	March 2, 2017
* Simon M. Lorne	Director	March 2, 2017
* Robert A. Malone	Director	March 2, 2017
* Paul D. Miller	Director	March 2, 2017
* Jane C. Sherburne	Director	March 2, 2017
* Michael T. Smith	Director	March 2, 2017
* Wesley W. von Schack	Director	March 2, 2017

*By: /s/ Melanie S. Cibik
Melanie S. Cibik
Pursuant to Power of Attorney
filed as Exhibit 24.1

EXHIBIT INDEX

Exhibit No.	Description
2.1	Separation and Distribution Agreement dated as of November 29, 1999 by and among Allegheny Teledyne Incorporated, TDY Holdings, LLC, Teledyne Industries, Inc. and Teledyne Technologies Incorporated (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K dated as of November 29, 1999 (File No. 1-15295))
2.2	Rule 2.7 Announcement, dated December 12, 2016 , related to the recommend cash offer for e2v technologies plc (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K dated December 11, 2016 (File No. 1-15295))
3.1	Restated Certificate of Incorporation of Teledyne Technologies Incorporated (including Certificate of Designation of Series A Junior Participating Preferred Stock) (incorporated by reference to Exhibit 3.1 to the Company's Annual Report on Form 10-K for the year ended January 2, 2000 (File No. 1-15295))
3.2	Amended and Restated Bylaws of Teledyne Technologies Incorporated (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended June 29, 2014 (File No. 1-15295))
10.1	Employee Benefits Agreement between Allegheny Teledyne Incorporated and Teledyne Technologies Incorporated (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K/A (Amendment No. 1) dated as of November 29, 1999 (File No. 1-15295))†
10.2	Teledyne Technologies Incorporated 1999 Incentive Plan (incorporated by reference to Exhibit 10.5 to the Company's Annual Report on Form 10-K for the year ended January 2, 2000 (File No. 1-15295))†
10.3	Teledyne Technologies Incorporated 1999 Non-Employee Director Stock Compensation Plan (incorporated by reference to Exhibit 10.6 to the Company's Annual Report on Form 10-K for the year ended January 2, 2000 (File No. 1-15295))†
10.4	Amendment No. 1 to Teledyne Technologies Incorporated 1999 Non-Employee Director Stock Compensation Plan (incorporated by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K for the year ended December 31, 2000 (File No. 1-15295)†
10.5	Amendment No. 2 to Teledyne Technologies Incorporated 1999 Non-Employee Director Stock Compensation Plan (incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K for the year ended December 31, 2000 (File No. 1-15295)†
10.6	Amendment No. 3 to Teledyne Technologies Incorporated 1999 Non-Employee Director Stock Compensation Plan (incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K for the year ended December 29, 2002 (File No. 1-15295)†
10.7	Amendment No. 4 to Teledyne Technologies Incorporated 1999 Non-Employee Director Stock Compensation Plan (incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q for the period ended September 28, 2003) (File No. 1-15295)†
10.8	Teledyne Technologies Incorporated 2002 Stock Incentive Plan (incorporated by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K for the year ended December 30, 2001 (File No. 1-15295))†
10.9	Administrative Rules of the 2002 Stock Incentive Plan Related to Non-Employee Director Stock Compensation (incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K dated January 23, 2007 (File No. 1-5295))†
10.10	Teledyne Technologies Incorporated 2008 Incentive Award Plan (incorporated by reference to Annex A of the Company's Definitive Proxy Statement filed March 7, 2008 (File No. 1-15295))†

10.11 Teledyne Technologies Incorporated Administrative Rules of the 2008 Incentive Award Plan Related to Non-Employee Director Stock Compensation (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended March 30, 2008 (File No. 1-15295))†

10.12 Administrative Rules for the Teledyne Technologies Incorporated Restricted Stock Award Program under the 2008 Incentive Award Plan, effective as of January 20, 2009 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 20, 2009 (File No. 1-15295))†

10.13 Form of Stock Option Agreement under the 2008 Incentive Award Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 19, 2010 (File No.1-15295))†

10.14 Summary Plan Description for the Teledyne Technologies Incorporated Performance Service Plan under the 2008 Incentive Award Plan for the 2012-2014 performance cycle (incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K for the fiscal year ended January 1, 2012 (File No. 1-15295))†

10.15 Teledyne Technologies Incorporated Amended and Restated 2008 Incentive Award Plan (incorporated by reference to Annex A of the Company's Definitive Proxy Statement filed March 8, 2012 (File No. 1-15295))†

10.16 Administrative Rules of the Teledyne Technologies Incorporated Amended and Restated 2008 Incentive Award Plan Related to Non-Employee Director Stock Compensation (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended April 1, 2012 (File No. 1-15295))†

10.17 Form of Stock Option Agreement under the Teledyne Technologies Incorporated Amended and Restated 2008 Incentive Award Plan (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended April 1, 2012 (File No. 1-15295))†

10.18 Administrative Rules related to the Restricted Stock Award Program under the Teledyne Technologies Incorporated Amended and Restated 2008 Incentive Award Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 22, 2013 (File No. 1-15295))†

10.19 Form of Restricted Stock Award Agreement under the Teledyne Technologies Incorporated Amended and Restated 2008 Incentive Award Plan (incorporated by reference to Exhibit 10.35 to the Company's Annual Report Form 10-K for the year ended December 30, 2012) (File No. 1-15295))†

10.20 Restricted Stock Award Agreement, dated October 22, 2013, by and between Teledyne Technologies Incorporated and Dr. Robert Mehrabian (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated October 22, 2013) (File No. 1-15295))†

10.21 Teledyne Technologies Incorporated 2014 Incentive Award Plan (incorporated by reference to Annex A of the Company's Definitive Proxy Statement filed March 5, 2014 (File No. 1-15295))†

10.22 Form of stock option agreement and conditions under the Teledyne Technologies Incorporated 2014 Incentive Award Plan (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated April 23, 2014 File No. 1-15295))†

10.23 Administrative Rules of the Teledyne Technologies Incorporated 2014 Incentive Plan Related to Non-Employee Director Stock Compensation (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K dated April 23, 2014 (File No. 1-15295))†

10.24 Standing resolutions of the Nominating and Governance Committee related to non-employee director compensation (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K dated December 31, 2014 (File No. 1-15295))†

10.25 Administrative Rules of the 2014 Incentive Award Plan Related to Non-Employee Director Restricted Stock Unit Awards and Fees (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K dated December 31, 2014 (File No. 1-15295))†

10.26 Administrative Rules for the Restricted Stock Award Program under the 2014 Incentive Award Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated February 17, 2015 (File No. 1-15295))†

10.27 Form of Restricted Stock Award Agreement under the 2014 Incentive Award Plan (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated February 17, 2015 (File No. 1-15295))†

10.28 Form of Restricted Stock Unit Agreement under the 2014 Incentive Award Plan (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K dated February 17, 2015 (File No. 1-15295))†

10.29 Restricted Stock Unit Agreement, dated December 20, 2016, by and among Teledyne Technologies Incorporated and Robert Mehrabian (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K/A dated December 20, 2016 (File No. 1-15295))†

10.30 Summary Plan Description for the 2015-2017 Performance Share Program incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K dated February 17, 2015 (File No. 1-15295)†

10.31 Summary Plan Description for the 2015-2017 Performance Share Program (Canadian Participants) (incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K dated October 22, 2013) (File No. 1-15295)†

10.32 Fifth Amended and Restated Employment Agreement, dated October 22, 2013, by and between Teledyne Technologies Incorporated and Dr. Robert Mehrabian (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated October 22, 2013) (File No. 1-15295)†

10.33 Amendment One, dated as of September 28, 2015, to the Fifth Amended and Restated Employment Agreement between Teledyne Technologies Incorporated and Robert Mehrabian. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated September 28, 2015) (File No. 1-15295))†

10.34 Amended and Restated Change in Control Severance Agreement, dated as of January 31, 2011, by and between Teledyne Technologies Incorporated and Robert Mehrabian (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 31, 2011 (File No. 1-15295))†

10.35 Amended and Restated Change in Control Severance Agreement, dated as of January 31, 2011, by and between Teledyne Technologies Incorporated and Al Pichelli (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 31, 2011 (File No. 1-15295))†

10.36 Amended and Restated change in Control Severance Agreement dated January 31, 2011, by and between Teledyne Technologies Incorporated and Susan L. Main (incorporated by reference to Exhibit 10.12 to Company's Annual Report on Form 10-K for the fiscal years ended December 29, 2013 (File No. 1-15295))†

10.37 Amended and Restated Change in Control Severance Agreement, dated as of January 31, 2011, by and between Teledyne Technologies Incorporated and Melanie Cibik (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K for the fiscal year end December 29, 2013 (File No. 1-15295))†

10.38 Amended and Restated Change in Control Severance Agreement, dated as of January 31, 2011, by and between Teledyne Technologies Incorporated and Jason Vanwees (incorporated by reference to Exhibit 10.39 to the Company's Annual Report on Form 10-K for the fiscal year end January 3, 2016 (File No. 1-15295)†

10.40 Teledyne Technologies Incorporated Executive Deferred Compensation Plan, as originally effective as of November 29, 1999, as amended and restated effective December 31, 2004 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated December 31, 2008)(File No. 1-15295)†

10.41 Teledyne Technologies Incorporated Pension Equalization/Benefit Restoration Plan, as originally effective as of November 29, 1999, as amended and restated effective December 31, 2004 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated December 31, 2008(File No. 1-15295))†

10.42 Teledyne Technologies Pension Equalization/Benefit Restoration Plan - Resolutions of the Plan Administration Committee (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated December 31, 2014 (File No. 1-15295))†

10.43 Form of Amendment to Stock Options, dated October 1, 2007, by and between Teledyne Technologies Incorporated and directors Frank V. Cahouet, Charles Crocker, Simon M. Lorne, Paul D. Miller and Michael T. Smith (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2007 (File No. 1-15295))†

10.44 Note Purchase Agreement, dated May 12, 2010, by and among Teledyne Technologies Incorporated and the Purchasers identified therein (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended July 4, 2010 (File No. 1-15295))

10.45 Amended and Restated Credit Agreement, dated as of March 1, 2013, by and among Teledyne Technologies Incorporated (Teledyne), certain subsidiaries of Teledyne as Designated Borrowers, certain subsidiaries of Teledyne as Guarantors, the Lender parties thereto and Bank of America, N.A. as Administrative Agent, Swing-Line Lender and L/C Issuer (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated March 1, 2013) (File No. 1-15295))

10.46 First Amendment to Amended and Restated Credit Facility, dated as of December 4, 2015, by and among Teledyne, certain subsidiaries of Teledyne, the lender parties thereto and Bank of America, N.A. as Administrative Agent, Swing Line Lender and L/C Issuer (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated December 4, 2015 (File No. 1-15295))

10.47 Second Amendment, dated as of January 17, 2017, to Amended and Restated Credit Agreement, dated as of March 1, 2013, as supplemented by the First Amendment dated as of December 4, 2015, by and among Teledyne, certain subsidiaries of Teledyne, the lender parties thereto and Bank of America, N.A. as Administrative Agent, Swing Line Lender and L/C Issuer (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 17, 2017 (File No. 1-15295))

10.48 Loan Agreement, dated October 22, 2012, among Teledyne Technologies Incorporated, as borrower, certain of its subsidiaries, as guarantors, and U.S. Bank National Association., as lender (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated October 22, 2012 (File No. 1-15295))

10.49 Amendment Agreement, dated November 21, 2013, by and among Teledyne Technologies Incorporated and Bank of America, N.A. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated November 21, 2013) (File No. 1-15295))

10.50 Amendment Agreement, dated November 21, 2013, by and among Teledyne Technologies Incorporated and U.S. Bank, National Association(incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated November 21, 2013) (File No. 1-15295))

10.51 Second Amendment Agreement, dated December 2, 2016, by and among Teledyne Technologies Incorporated and Bank of America, N.A. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated December 2, 2016) (File No. 1-15295))

10.52 Second Amendment Agreement, dated December 2, 2016, by and among Teledyne Technologies Incorporated and U.S. Bank, National Association (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated December 2, 2016) (File No. 1-15295))

10.53 Note Purchase Agreement, dated September 23, 2014, by and among Teledyne Technologies Incorporated and the Purchasers identified therein (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on September 23, 2014 (File No. 1-15295))

10.54 Note Purchase Agreement, dated August 27, 2015, by and among Teledyne Technologies Incorporated and the Purchasers identified therein (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated August 27, 2015) (File No. 1-15295))

10.55 Credit Agreement dated December 11, 2016 with Bank of America, N.A., as administrative agent and a lender and the other lenders parties thereto (incorporated by reference to the Company's Current Report on Form 8-K dated December 11, 2016 (File No. 1-15295))

10.56	Letter dated January 17, 2017, confirming Effectiveness of Qualifying Amendment to Credit Agreement Dated December 11, 2016 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 17, 2017 (File No. 1-15295))
10.57	Form of Indemnification Agreement executed by each of the Company's directors and named executive officers (incorporated by reference to the Company's Current Report on Form 8-K dated April 22, 2009 (File No. 1-15295))†
14.1	Teledyne Technologies Incorporated Global Code of Ethical Conduct - this code of ethics may be accessed via the Company's website at www.teledyne.com/aboutus/ethics.pdf
14.2	Code of Ethics for Financial Professionals - this code of ethics may be accessed via the Company's website at www.teledyne.com/aboutus/ethics.asp
14.3	Directors, Code of Business Conduct and Ethics - this code of ethics may be accessed via the Company's website at www.teledyne.com/aboutus/ethics.asp
21	Subsidiaries of Teledyne Technologies Incorporated*
23.1	Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm *
23.2	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm*
24.1	Power of Attorney - Directors*
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*
32.1	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
32.2	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
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**

* Submitted electronically herewith.

** Attached as Exhibit 101 to this report are the following documents formatted in XBRL (Extensible Business Reporting Language) for the year ended January 1, 2017: (i) the Consolidated Statement of Income, (ii) the Consolidated Balance Sheet, (iii) the Consolidated Statement of Shareholders' Equity, (iv) the Consolidated Statement of Comprehensive Income (Loss), (v) the Consolidated Statement of Cash Flows, (vi) Notes to Consolidated Financial Statements and (vii) Financial Schedule of Valuation and Qualifying Accounts.

† Denotes management contract or compensatory plan or arrangement required to be filed as an Exhibit to this Form 10-K.

FORWARD-LOOKING STATEMENTS CAUTIONARY NOTICE

From time to time the Company makes, and this Annual Report and the Company's Annual Report on Form 10-K may contain, forward-looking statements, as defined in the Private Securities Litigation Reform Act of 1995, directly and indirectly relating to earnings, growth opportunities, acquisitions and divestitures, product sales, capital expenditures, pension matters, stock option compensation expense, interest expense, severance and relocation costs, environmental remediation costs, taxes, exchange rate fluctuations and strategic plans. All statements made in this Annual Report and the Company's Annual Report on Form 10-K that are not historical in nature should be considered forward-looking. Actual results could differ materially from these forward-looking statements.

Many factors could change the anticipated results, including: disruptions in the global economy; changes in demand for products sold to the defense electronics, instrumentation, digital imaging, energy exploration and production, commercial aviation, semiconductor and communications markets; funding, continuation and award of government programs; cuts to defense spending resulting from existing and future deficit reduction measures; risks associated with our pending acquisition of e2v, including the failure to satisfy closing conditions and the failure to successfully integrate the to be acquired business; impacts from the United Kingdom's decision to exit the European Union; uncertainties related to the policies of the new U.S. Presidential Administration; and threats to the security of our confidential and proprietary information, including cyber security threats. Continued lower oil and natural gas prices, as well as instability in the Middle East or other oil producing regions, and new regulations or restrictions relating to energy production, including with respect to hydraulic fracturing could further negatively affect our businesses that supply the oil and gas industry. Increasing fuel costs could negatively affect the markets of our own commercial aviation businesses. In addition, financial market fluctuations affect the value of our pension assets. Changes in the policies of U.S. and foreign governments, including economic sanctions, could result, over time, in reductions or realignment in defense or other government spending and further changes in programs in which the Company participates.

While Teledyne's growth strategy includes possible acquisitions including the pending e2v transaction, we cannot provide any assurance as to when, if or on what terms any acquisitions will be made. Acquisitions involve various inherent risks, such as, among others, our ability to integrate acquired businesses, retain customers and achieve identified financial and operating synergies. There are additional risks associated with acquiring, owning and operating businesses outside of the United States, including those arising from U.S. and foreign government policy changes or actions and exchange rate fluctuations.

The Company continues to take action to assure compliance with the internal controls, disclosure controls and other requirements of the Sarbanes-Oxley Act of 2002. While we believe our control systems are effective, there are inherent limitations in all control systems, and misstatements due to error or fraud may occur and may not be detected.

Additional information concerning factors that could cause actual results to differ materially from those projected in the forward-looking statements is contained in Teledyne Technologies' periodic filings with the Securities and Exchange Commission, including its 2016 Annual Report on Form 10-K. Forward-looking statements are generally accompanied by words such as "estimate", "project", "predict", "believes" or "expect", that convey the uncertainty of future events or outcomes. The Company assumes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information or otherwise.

Editor: Neil Humphrey | Design: Jiaxu Zhang & Chris McCorkindale | Printed in the U.S.A.

ABOVE: Hubble Space Telescope images of the "Pillars of Creation," a birthplace for stars over 6,500 light years from Earth. Respective images taken with sensors produced by e2v and Teledyne. Credits: National Aeronautics and Space Administration (NASA) and European Space Agency (ESA)

FRONT COVER: Image from the NOAA GOES-16 satellite's Advanced Baseline Imager taken on January 15, 2017, and created using several of the 16 spectral channels. Teledyne provided the detectors for the four longest wavelength channels. Teledyne Paradise Datacom also provides solid state power amplifiers for the GOES ground antenna system. Credits: National Oceanic and Atmospheric Administration (NOAA)

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