JANES CAPITAL PARTNERS
Aerospace and Defense Investment Banking

AEROSPACE & DEFENSE
Quarterly Report





Q4 2017

Not affiliated with Jane's Information Group

Oaklins
MEMBER FIRM

AEROSPACE & DEFENSE

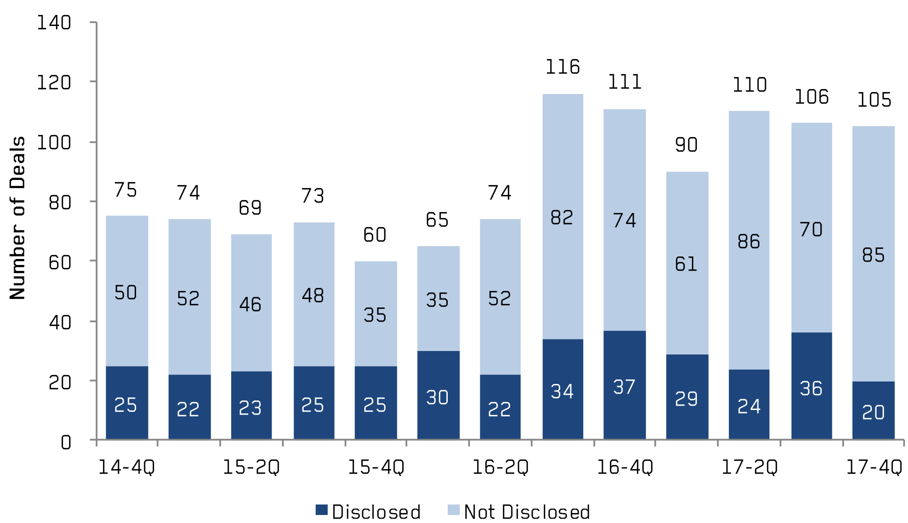
Quarterly Update
Q4 2017

IN THIS ISSUE

EXECUTIVE SUMMARY

- There were 105 A&D deals announced in Q4 2017, which was a decrease from the number of deals announced during Q3 2017. Year-over-year quarterly transaction volume decreased by 5.4% compared to the 111 deals announced during Q4 2016.
- Average disclosed deal size during the quarter decreased to $472 million compared to $1.4 billion during Q3 2017.
- The most active segments in terms of number of M&A deals were:
  - Government Services, IT Services and Software (18 deals)
  - MRO & Logistics (14 deals)
  - Machined & Cast Parts (13 deals)
  - Components & Subsystems (11 deals)
  - Engineering and Project Management (7 deals)
- The top 3 segments in terms of disclosed transaction values were:
  - Government Services, IT Services and Software ($6.5 billion)
  - Components & Subsystems ($887 million)
  - Test & Measurement ($789 million)

NUMBER OF DEALS BY QUARTER



AEROSPACE & DEFENSE

Quarterly Update
Q4 2017

CONTACT INFORMATION

David Janes
Chairman
Office: (949) 769-3323 Ext. 301
djanes@janescapital.com

Stephen Perry
Managing Director & CEO
Office: (949) 769-3323 Ext. 302
Direct: (949) 233-0665
sperry@janescapital.com

Ilana Germaine
Vice President
Office: (949) 769-3323 Ext. 308
Direct: (910) 448-0280
igermaine@janescapital.com

Jason Kimball
Vice President
Office: (949) 769-3323 Ext. 315
Direct: (949) 632-1704
jkimball@janescapital.com

Ken Fukumoto
Vice President
Office: (949) 769-3323 Ext. 314
Direct: (831) 920-7667
kfukumoto@janescapital.com

John Dougherty
Analyst
Office: (949) 769-3323 Ext. 305
Direct: (949) 355-5937
jdougherty@janescapital.com

Chris Reinecke
Analyst
Office: (949) 769-3323 Ext. 312
Direct: (714) 856-9989
creinecke@janescapital.com

ABOUT JANES CAPITAL PARTNERS

Janes Capital Partners specializes in Mergers & Acquisitions (M&A) for middle market Aerospace & Defense companies. Our clients are Aerospace & Defense companies with enterprise values between $25 million and $500 million. The team at Janes Capital Partners has completed over 75 transactions within the Aerospace & Defense industry. Through this M&A experience, we provide our clients with unparalleled access to potential acquirers in the aerospace and defense industry along with in-depth knowledge of the industry and its dynamics. Our clients receive high touch service from accomplished professionals with extensive A&D transaction and industry experience.

Janes Capital Partners is a member firm of Oaklins, a global alliance of mid-market investment banks. Established in 1985, the alliance includes over 700 M&A professionals, with 60+ member firms in 41 countries around the globe. The alliance has closed over 1,500 transactions totaling more than $75 billion in transaction value in the past five years. Janes Capital Partners serves as Oaklins' Global Aerospace & Defense Industry Group Practice Leader.

SELECT TRANSACTIONS

Acted as Financial Advisor to
LIGHTNING DIVERSION SYSTEMS
Leading provider of lightning protection systems; on its sale to
Ducommun

Acted as Financial Advisor to
Advatech Pacific CROSS DOMAIN SOLUTIONS
Leading designer and manufacturer of tactical, cyber-secure, cross domain products; on its sale to
GENERAL DYNAMICS Mission Systems

Acted as Financial Advisor to
GE Aviation
on the sale of its Santa Ana operations, a leading manufacturer of flight critical parts for military and commercial aircraft, to an affiliate of
ADMIRALTY PARTNERS, INC.

Acted as Financial Advisor to
MPS Multi Pilot Simulations
Innovative designer and manufacturer of fixed-base flight simulators based on Airbus A320 and Boeing 737 for airline pilot training; on its sale of a majority stake to
H2 Equity Partners

Acted as Financial Advisor to
TDK
On its acquisition of
Hutchinson TECHNOLOGY
NASDAQ: HTCH
$245,000,000

Acted as Financial Advisor to
AC&A
Leading manufacturer of composite and metallic parts and tooling for the A&D, space and niche and specialty automotive markets; on its sale to
ae Industrial Partners

AEROSPACE & DEFENSE

Quarterly Update
Q4 2017

Oaklins

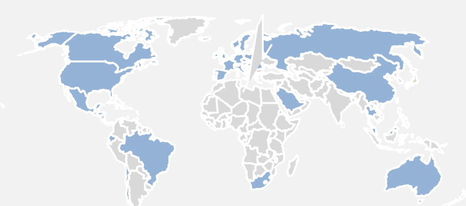
Oaklins Overview

- World's leading M&A alliance, founded in 1985
- 700+ investment banking professionals
- 60+ offices located around the globe
- Specializes in middle-market companies
- Operating in 40 countries
- Highest standards of professionalism, integrity and customer service
- Extensive intranet for information-sharing between member firms

Five-Year Transaction Snapshot

- 1,500+ closed transactions
- Closed transactions valued at over $75 billion
- 312+ cross-border deals

Countries with Oaklins Firms



- Australia
- Austria
- Belgium
- Brazil
- Canada
- Chile
- China
- Croatia
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Ireland
- Israel
- Italy
- Japan
- Latvia
- Lithuania
- Mexico
- Morocco
- Netherlands
- Norway
- Peru
- Poland
- Romania
- Russia
- Saudi Arabia
- Serbia
- Singapore
- Slovakia
- Slovenia
- South Africa
- Spain
- Sweden
- Switzerland
- Thailand
- Turkey
- UK
- USA

Sources: CapIQ, Indutrade Investor Presentations, Oaklins & market research
Note: LTM revenue as of 9.30.17 and market capitalization as of 12.11.17

Oaklins

Janes Capital Partners is a member firm of Oaklins, a global alliance of mid-market investment banks. Established in 1985, the alliance includes over 700 M&A professionals, with 60+ member firms in 40 countries around the globe. The alliance has closed over 1,500 transactions totaling more than $75 billion in transaction value in the past five years. **Janes Capital Partners serves as Oaklins' Global Aerospace & Defense Industry Group Practice Leader.**

In each Quarterly Publication, a fellow member firm of Oaklins and a M&A transaction completed by an Oaklins member firm will be profiled.

Oaklins Member Firm Spotlight

Oaklins DENMARK

Founded: 1979

Location: Copenhagen, Denmark

Professionals: 15+

Completed Transactions: 250+

Daniel Sand
Managing Partner

Nicolai Audon
Director

Overview

Oaklins Denmark (the "Firm"), formerly known as Audon Partners, merged with Oaklins in 1994. Over the past 35 years, Oaklins Denmark has become a leading independent M&A advisory firm in Denmark, serving the mid-market sector of private and family-owned businesses. The Firm offers mergers and acquisitions advisory services, growth equity & ECM, debt advisory and corporate finance services. Since 2015, Oaklins Denmark has closed 15 transactions.

Recent Transactions

- Oaklins Denmark advised ERIKS on its divesture of Dansk Ventil Center, a leading distributor of valves, to Armatec (July 2017)
- Oaklins Denmark advised ERIKS on its divesture of Valtor Offshore, a leading distributor providing API and ASME valves, actuators and process related equipment, to Armatec (July 2017)
- Oaklins Denmark advised Elma Instruments, a leading distributor of test and measurement equipment in Scandinavia, on its sale to Indutrade (July 2017)

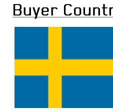
Oaklins Deal Spotlight

Oaklins Denmark advised Elma Instruments on its sale to Indutrade (OM:INDT)

Indutrade signed an agreement to acquire Elma Instruments (the "Company"), a leading distributor of test and measurement equipment in Scandinavia. Its products include measurement instruments for electricity, thermal imaging, monitoring and ventilation, among others. Elma Instruments has annual sales of approximately $22.1 million. The Company will be part of Indutrade's Industrial Components business area and is expected to have a positive impact on Indutrade's earnings per share.

Buyer Description

Headquartered in Stockholm, Sweden, Indutrade provides high-tech components, systems and services to a variety of niche industries including engineering, pharmaceuticals and energy. Its three main product groups are (1) valves, (2) hydraulics and industrial equipment and (3) measurement technology. Indutrade is organized into six business areas: Engineering & Equipment, Flow Technology, Fluids & Mechanical Solutions, Industrial Components, Measurement & Sensor Technology and Special Products. Indutrade has LTM revenue of $1.7 billion and a market cap of $3.1 billion. Indutrade has completed 10 acquisitions in 2017 and continues to pursue M&A activity.

Target Country	Buyer Country
	
Denmark	Sweden

AEROSPACE & DEFENSE

Quarterly Update
Q4 2017

TOP 5 M&A DEALS THIS QUARTER

Target	Target Description	Acquiror	Announced Date	Valuation Metrics: Implied TEV ($M)	TEV/ Revenue	TEV/ EBITDA	Deal Type(s)
gemalto security to be free	Gemalto N.V. (AMS: GTO.AS) is an international digital security company providing software applications, secure personal devices such as smart cards and tokens, and managed services ranging from secure software to biometrics and encryption technologies and services. Gemalto's solutions enable businesses and governments to authenticate identities and protect data from payment to enterprise security and the internet of things. The company has customers in over 180 countries.	THALES	12/17/17	$6,521.4	1.8x	11.9x	PU, I
Trescal	Trescal S.A. is an international specialist for calibration services, operating across more than 110 sites in 22 countries covering Europe, North and South America and Asia. Trescal serves more than 40,000 customers over a range of sectors, including defense, aerospace, telecommunications, transportation and automotive. The company's metrology services include calibration and the repair and maintenance of test and measurement equipment. Trescal also offers customized calibration management software solutions, metrology and technical support.	OMERS Private Equity	11/14/17	$788.6	na	na	PS, PB, I
Anaren What'll we think of next?	Anaren is a global designer and manufacturer of high-frequency RF and microwave microelectronics, components and assemblies for the space, defense and telecommunications sectors. Anaren's engineering expertise and products are utilized by major manufacturers around the world, in everything from telecommunications networking products, fighter-jet jammers, base-station amplifiers, to communication satellite systems. Anaren's products are the result of innovative engineering, design, materials processing and world-class volume manufacturing.	TTM Technologies	12/03/17	$775.0	3.5x	14.2x	PS
PRAXIS ENGINEERING	Praxis Engineering Technologies focuses on the application of software and system engineering technologies to solve complex problems for the Intelligence Community. Praxis' core competencies include: SOA/enterprise application development, configuration management, embedded real-time technologies, automated testing of complex systems, database architecture, development and administration program management and IT infrastructure and network support.	CSRA	10/17/17	$235.0	na	na	PR
HNZ	HNZ Group is an international provider of helicopter transportation and related support services with operations in Canada, Australia, New Zealand, Antarctica, the United States and Southeast Asia. The Corporation operates in excess of 115 helicopters to support offshore and onshore charter activities under a number of different brands.	Management Buyout	10/31/17	$189.6	1.1x	13.8x	PU, I

PU Public Seller | PR Private Seller | PS Private Equity Seller | PB Private Equity Buyer | I International Deal

Source(s): CapIQ, Dacis, company reports, press releases

AEROSPACE & DEFENSE

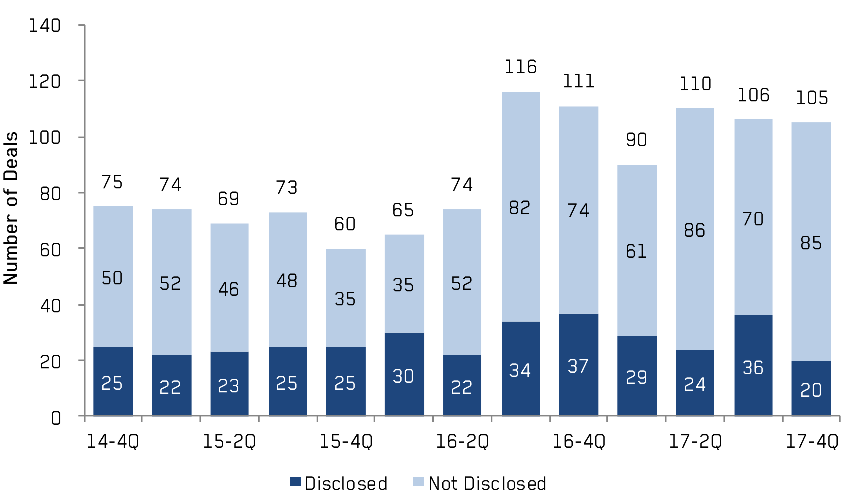
Quarterly Update
Q4 2017

M&A DEAL VOLUME

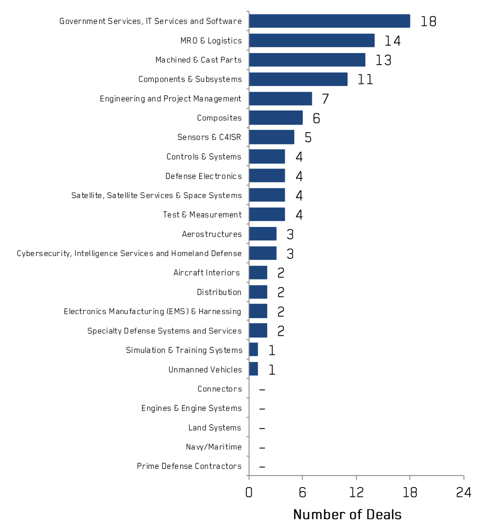
- Average deal size decreased over last quarter from $1.4B to $472M
  - Total disclosed deal volume totaled $9.4B, a decrease of more than $40.1B from Q3 2017
- There were 105 A&D deals announced in Q4 2017, which was a decrease from the 106 deals announced during Q3 2017 and a year-over-year decrease of 5.4% from Q4 2016

- The most active segments ranked by total number of deals were:
  - Government Services, IT Services and Software
  - MRO & Logistics
  - Machined & Cast Parts
  - Components & Subsystems

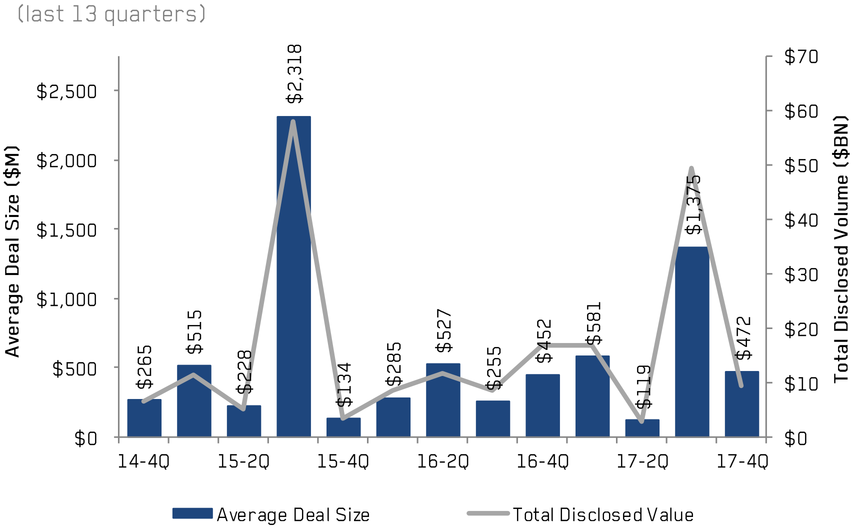
Number of Deals by Quarter
(last 13 quarters)



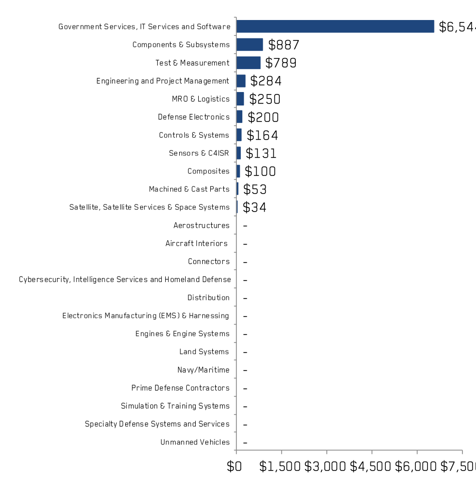
Number of Deals by Segment
(Q4 2017)



Average Size of Disclosed Deals and Total Disclosed Volume
(last 13 quarters)



Volume of Deals by Segment
(Q4 2017)



Source(s): CapIQ, Dacis, company reports, press releases

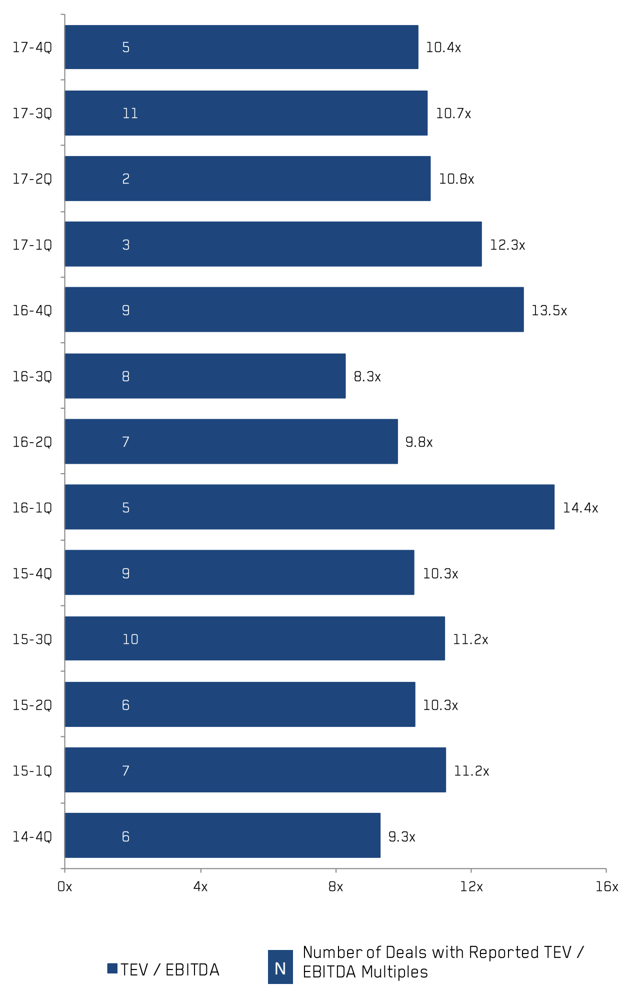
AEROSPACE & DEFENSE

Quarterly Update
Q4 2017

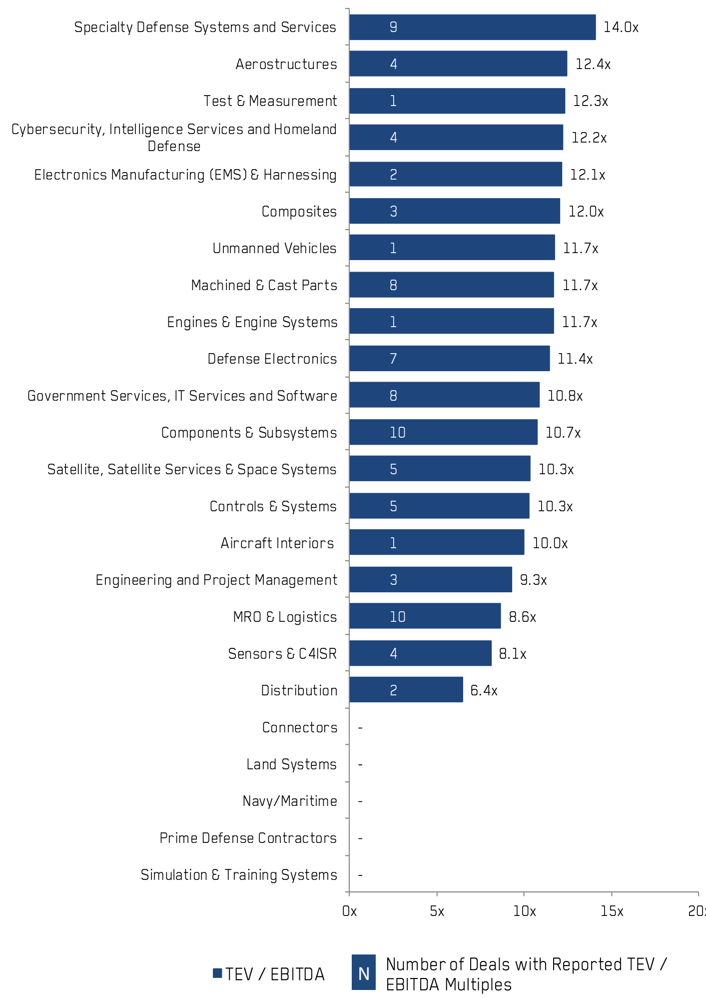
QUARTERLY TEV / EBITDA TRANSACTION MULTIPLES

- The average TEV / EBITDA transaction multiple over the last 13 quarters across all A&D transactions was 10.9x
- Of the over 1,100 deals tracked by Janes Capital Partners over this period, only 88 reported TEV / EBITDA multiples
- As expected, multiples vary widely by segment with Specialty Defense Systems and Services (14.0x), Defense Electronics (11.4x) and Distribution (6.4x)

TEV / EBITDA A&D Transaction Multiples by Quarter
(last 13 quarters)



TEV / EBITDA Transaction Multiples by Segment
(last 13 quarters)



Note: Excludes TEV / EBITDA transaction multiples over 30.0x
Source(s): CapIQ, Dacis, company reports, press releases

AEROSPACE & DEFENSE

Quarterly Update

Q4 2017

AEROSPACE & DEFENSE PUBLIC VALUATIONS

Public Valuations by A&D Segment

($ in millions)	LTM Revenue	LTM EBITDA Margin	Market Cap	% of 52-Wk Hi	TEV	TEV / LTM EBITDA
Aerostructures						
CPI Aerostructures	$82	13.9%	$79	89.1%	$111	9.8x
Ducommun	558	9.0%	322	80.0%	541	10.7x
FACC	886	9.2%	951	98.9%	1,178	14.4x
GKN	12,291	11.8%	7,415	84.2%	8,126	5.6x
Hexcel	1,945	23.1%	5,556	96.7%	6,270	14.0x
Kaman	1,765	9.2%	1,637	97.4%	2,015	12.4x
Latécoère	755	4.1%	647	95.8%	687	22.0x
Magellan	784	15.6%	975	95.9%	1,053	8.6x
Spirit AeroSystems	6,838	10.8%	10,088	99.3%	10,451	14.2x
Triumph	3,292	11.0%	1,350	78.2%	2,749	7.6x
	Median	**11.8%**				**11.9x**
Commercial Airframes						
Airbus	$78,985	3.7%	$77,187	93.0%	$80,128	NM
Boeing	91,310	12.3%	175,642	98.5%	176,437	15.7x
Bombardier	15,883	4.1%	5,305	93.5%	14,381	22.0x
Embraer	6,258	9.9%	4,425	91.2%	6,037	9.7x
Textron	13,934	10.8%	14,907	98.1%	18,086	12.0x
	Median	**8.2%**				**14.9x**
Components & Subsystems						
Ametek	$4,130	26.0%	$16,749	99.2%	$18,443	17.2x
CIRCOR	614	9.9%	803	66.7%	997	16.4x
Cobham	2,637	NM	4,060	75.6%	4,660	NM
Crane	2,753	17.6%	5,295	98.4%	5,480	11.3x
Meggitt	2,698	26.1%	5,051	91.0%	6,508	9.2x
RBC Bearings	635	24.2%	2,986	90.3%	3,163	20.6x
Teledyne	2,452	18.6%	6,419	97.1%	7,533	16.5x
Timken	2,881	14.2%	3,815	92.6%	4,716	11.6x
TransDigm	3,504	47.1%	14,269	93.1%	25,412	15.4x
Woodward	2,099	16.8%	4,688	92.3%	5,214	14.8x
	Median	**22.3%**				**14.8x**
Controls & Systems						
Astronics	$607	13.1%	$1,162	93.8%	$1,324	16.7x
Curtiss-Wright	2,225	19.6%	5,377	97.5%	5,910	13.6x
Eaton	20,058	16.3%	34,812	96.0%	41,998	12.8x
Heroux-Devtek	317	13.6%	439	96.9%	501	11.6x
Honeywell	39,676	20.6%	116,064	97.9%	122,834	15.0x
ISSC	17	NM	49	64.8%	25	NM
Moog	2,498	12.8%	3,112	96.5%	3,701	11.5x
Parker-Hannifin	12,651	15.8%	26,589	99.4%	31,553	15.8x
Rockwell Collins	6,822	21.6%	22,204	99.4%	28,663	19.5x
Zodiac Aerospace	6,089	6.1%	8,385	86.4%	9,391	NM
	Median	**15.5%**				**14.6x**
Engines & Engine Systems						
General Electric	$112,129	15.8%	$151,328	54.8%	$296,278	16.7x
Rolls Royce	20,856	5.9%	21,051	85.2%	22,699	18.5x
Safran	18,891	22.7%	42,886	93.1%	42,016	9.8x
UTC	58,816	17.5%	101,874	99.3%	122,850	11.9x
	Median	**15.5%**				**14.2x**

($ in millions)	LTM Revenue	LTM EBITDA Margin	Market Cap	% of 52-Wk Hi	TEV	TEV / LTM EBITDA
Machined and Cast Parts						
Arconic	$12,656	13.5%	$13,116	88.8%	$18,229	10.6x
ATI	3,411	9.4%	2,628	90.8%	4,517	14.1x
Barnes Group	1,388	21.8%	3,392	86.8%	3,774	12.5x
Lisi	1,870	15.7%	2,547	84.3%	2,792	9.5x
Senior	1,268	11.5%	1,478	88.2%	1,714	11.8x
SIFCO	121	3.2%	37	67.9%	67	17.2x
	Median	**12.5%**				**12.6x**
MRO						
AAR	$1,828	6.3%	$1,341	89.2%	$1,504	13.0x
BBA Aviation	2,274	18.8%	4,856	99.3%	6,123	14.3x
HAECO	1,801	16.6%	1,065	88.6%	1,600	5.3x
HEICO	1,525	24.4%	7,197	93.0%	8,037	21.6x
KLX Inc.	1,672	15.7%	3,437	97.2%	4,334	16.5x
MTU Aero Engines	6,000	13.2%	9,239	96.7%	9,136	11.6x
ST Engineering	4,963	11.2%	7,600	84.5%	8,065	14.6x
Wesco Aircraft	1,429	9.1%	736	47.6%	1,547	11.8x
	Median	**14.4%**				**13.6x**
Defense Electronics, Sensors & C4ISR						
AeroVironment	$296	14.9%	$1,318	95.2%	$1,091	24.7x
Cubic	1,486	4.5%	1,604	90.8%	1,799	NM
Elbit	3,322	12.7%	5,707	86.2%	6,178	14.7x
Esterline	2,002	14.8%	2,220	72.7%	2,700	9.1x
FLIR	1,780	21.1%	6,460	96.3%	6,444	17.2x
Harris	5,893	23.6%	16,885	97.7%	20,494	14.7x
Kongsberg Gruppen	1,844	9.0%	2,213	97.4%	2,468	14.9x
Kratos	732	5.0%	1,094	76.0%	1,224	NM
KVH Industries	165	2.0%	177	81.8%	181	NM
L3 Technologies	11,036	12.6%	15,460	98.9%	18,436	13.3x
Mercury Systems	427	19.5%	2,477	93.4%	2,451	NM
OSI Systems	997	15.7%	1,221	66.6%	1,489	9.5x
QinetiQ	1,091	20.7%	1,744	71.6%	1,482	6.6x
Smiths	4,323	19.6%	7,970	88.4%	9,264	10.9x
Thales	17,434	11.5%	22,869	89.5%	20,548	10.2x
Ultra	1,020	16.2%	1,411	60.0%	1,749	10.6x
	Median	**14.0%**				**13.0x**
Prime Defense Contractors						
BAE	$24,058	10.8%	$24,659	84.0%	$26,896	10.4x
General Dynamics	31,142	15.8%	60,747	94.7%	62,907	12.8x
Huntington Ingalls	7,367	14.9%	10,668	93.0%	11,451	10.4x
Leonardo	14,126	14.4%	6,842	61.6%	11,832	5.8x
Lockheed Martin	49,663	13.1%	92,055	99.1%	103,459	15.9x
Northrop Grumman	25,566	14.9%	53,426	98.6%	58,638	15.4x
Raytheon	24,789	15.1%	54,305	97.6%	57,432	15.3x
	Median	**14.2%**				**12.3x**

Note: Trading metrics as of 12.31.17. Valuation multiples based on LTM financial data converted at the historical exchange rate as of each fiscal period end date, and excludes multiples above 25.0x and under 0.0x.
Source(s): CapIQ

AEROSPACE & DEFENSE PUBLIC VALUATIONS (CONTINUED)

Public Valuations by A&D Segment (continued)

($ in millions)	LTM Revenue	LTM EBITDA Margin	Market Cap	% of 52-Wk Hi	TEV	TEV / LTM EBITDA
Satellites, Satellite Services and Space Systems						
Aerojet Rocketdyne	$1,881	10.5%	$2,343	86.1%	$2,569	13.1x
Ball Corporation	10,760	15.2%	13,250	87.5%	20,359	12.4x
Comtech	536	11.6%	522	92.6%	674	10.9x
Gilat Satellite	280	10.4%	423	97.9%	363	12.4x
Intelsat	2,161	75.1%	403	45.4%	14,304	8.8x
Maxar Technologies	1,538	15.5%	3,625	95.6%	4,366	18.3x
Orbital ATK	4,688	14.0%	7,586	97.7%	8,888	13.5x
ViaSat	1,570	12.3%	4,359	98.6%	5,139	NM
	Median	20.6%				12.8x
Specialty Systems and Services						
American Outdoor	$740	20.8%	$695	52.4%	$916	5.9x
Axon Enterprise	331	7.1%	1,402	94.1%	1,340	NM
CAE	2,210	20.3%	4,993	98.9%	5,578	12.4x
Chemring	707	15.0%	694	88.3%	838	7.9x
MSA Safety	1,147	18.9%	2,948	89.8%	3,316	15.3x
SAAB	3,751	9.1%	5,202	87.6%	5,415	15.8x
	Median	15.2%				11.5x

($ in millions)	LTM Revenue	LTM EBITDA Margin	Market Cap	% of 52-Wk Hi	TEV	TEV / LTM EBITDA
Engineering and Construction						
AECOM	$18,203	5.2%	$5,856	94.1%	$9,116	9.6x
Babcock	6,289	13.2%	4,817	68.5%	6,783	8.2x
Fluor	19,483	3.7%	7,225	88.5%	6,988	9.6x
Jacobs Engineering	10,023	6.4%	7,950	95.1%	7,473	11.7x
	Median	7.1%				9.8x
Government, IT Services & Software						
Booz Allen	$6,022	9.4%	$5,560	96.1%	$7,077	12.4x
CACI	4,367	8.3%	3,259	89.8%	4,363	12.0x
CGI Group	8,677	16.7%	15,445	97.6%	16,863	11.6x
Engility	1,973	9.6%	1,045	79.6%	1,992	10.5x
ICF	1,198	9.5%	979	90.6%	1,202	10.6x
KBR	4,424	3.9%	2,778	93.3%	2,770	16.2x
KEYW	384	6.4%	289	47.3%	538	21.9x
Leidos	10,229	10.2%	9,768	98.3%	12,601	12.0x
ManTech	1,649	7.7%	1,957	94.2%	1,808	14.3x
MAXIMUS	2,451	15.2%	4,662	98.7%	4,503	12.1x
SAIC	4,352	7.0%	3,275	85.2%	4,181	13.8x
Serco Group	3,930	3.2%	1,455	65.5%	1,698	13.6x
Vectrus	1,107	4.0%	343	86.7%	353	8.1x
VSE	780	10.2%	525	80.9%	726	9.1x
	Median	8.7%				12.7x

Market Performance Summary

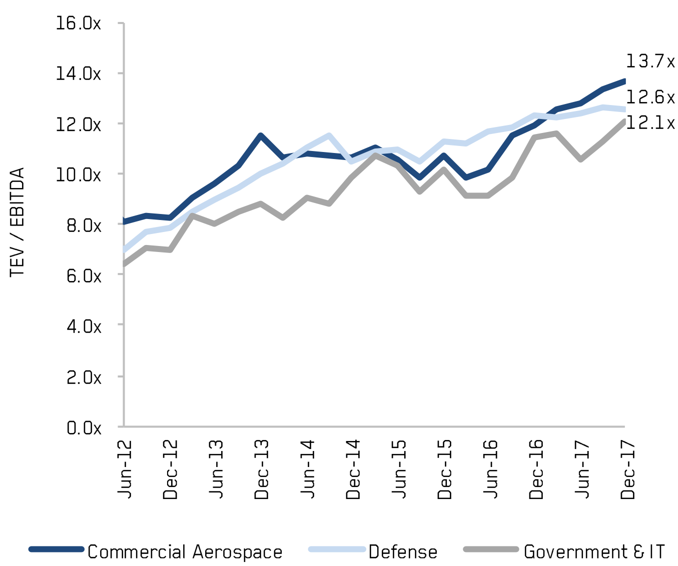
Performance Dashboard

(by TEV / EBITDA Valuation)

Top 10			Bottom 10		
AV	NasdaqGS:AVAV	24.7x	HAECO	SEHK:44	5.3x
BOMBARDIER	TSX:BBD.B	22.0x	GKN	LSE:GKN	5.6x
LATECOERE	ENXTPA:LAT	22.0x	LEONARDO	BIT:LDO	5.8x
KEYW	NasdaqGS:KEYW	21.9x	AMERICAN OUTDOOR	NasdaqGS:AOBC	5.9x
HEICO	NYSE:HEI	21.6x	QinetiQ	LSE:QQ.	6.6x
RBC BEARINGS	NasdaqGS:ROLL	20.6x	Triumph Group, Inc.	NYSE:TGI	7.6x
Rockwell Collins	NYSE:COL	19.5x	Chemring Group	LSE:CHG	7.9x
Rolls-Royce	LSE:RR.	18.5x	VECTRUS	NYSE:VEC	8.1x
MAXAR TECHNOLOGIES	NYSE:MAXR	18.3x	babcock	LSE:BAB	8.2x
AMETEK	NYSE:AME	17.2x	MAGELLAN AEROSPACE	TSX:MAL	8.6x

TEV / EBITDA Valuation Trend by Sector

(last 5 years)



Note: Trading metrics as of 12.31.17. Valuation multiples based on LTM financial data converted at the historical exchange rate as of each fiscal period end date, and excludes multiples above 25.0x and under 0.0x.
Source(s): CapIQ

AEROSPACE & DEFENSE

Quarterly Update
Q4 2017

Deal Spotlight

Anaren Key Figures	
Headquarters	East Syracuse, NY
Employees	~1,000
LTM Revenue	$219M
LTM EBITDA	$55M
President and CEO	Lawrence A. Sala
President, Space & Defense	David E. Kopf

Note: LTM data as of 9.30.17

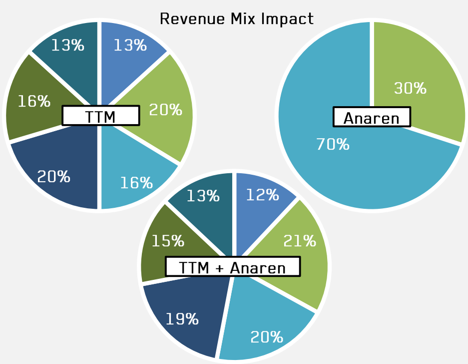
Deal Summary	
Total Enterprise Value	$775M
LTM Revenue Multiple	3.5x
LTM EBITDA Multiple	14.2x
Announced Date	December 3, 2017
Expected Close Date	1H 2018

Note: TEV as of 12.4.17

Anaren Product & Market Profile

Products	Applications	End Markets
▪ Hybrid Micro-Electronics ▪ Thick-Film and LTCC Ceramics ▪ Multi-Layer Stripline RF PCB, Assembly and Test ▪ Beamforming & Switching Networks	▪ Advanced Radar Systems ▪ Advanced Jamming Systems ▪ Satellite Communication Systems ▪ Base Station and Small Cells	▪ Space ▪ Defense ▪ Wireless ▪ Medical

Revenue Mix Impact



Sources: DACIS, CapIQ, company websites, market research
Note: Revenue mix for LTM as of 9.30.17

TTM Technologies to Acquire Anaren from Veritas Capital

Transaction Summary

On December 3, 2017, TTM Technologies (NasdaqGS: TTM), a global PCB manufacturer, agreed to acquire Anaren, a provider of high-frequency RF and microwave microelectronics, components and assemblies from Veritas Capital. The combination of the businesses is expected to result in meaningful value creation through revenue synergies, a broadened product portfolio, an increased customer base, new end market opportunities, cost savings and enhanced growth. TTM Technologies (TTM) will acquire Anaren for approximately $775 million in cash. TTM plans to finance the transaction with a $700 million add-on to its existing Term Loan B and cash on hand. Anaren shareholders will receive $28.00 in cash (without interest and less any applicable withholding taxes) for each share of Anaren common stock they own, resulting in an equity value of approximately $383 million. The transaction is subject to the satisfaction of customary closing conditions, including (i) Hart-Scott-Rodino Antitrust Improvements Act of 1976 and (ii) clearance by the Committee on Foreign Investment in the United States (CFIUS) and by the Defense Security Service (DSS). The transaction is expected to close in the first half of 2018.

Anaren Overview

Anaren (the "Company") is a leading provider of mission-critical RF/microwave solutions for space, defense and wireless infrastructure end markets. The Company's engineering capabilities and products are incorporated in telecommunications networking products, fighter-jet jammers, base-station amplifiers and communication satellite systems, among others. Because Anaren products are custom-designed, highly-integrated subsystems and components, Anaren is sole-sourced and "spec'd" in on high-priority programs including AMDR, TPQ-53, THAAD, F-35, F-16, E2D, Orion, GPSIII and AEHF. Anaren's customer base includes Northrop Grumman, Raytheon, BAE, Honeywell, Lockheed Martin, Boeing, GE, Thales and many others.

Deal Rationale

Strategic Rationale	Benefits from Acquiring Anaren
Broadens Product Portfolio and End Market Positioning	▪ Diversifies space & defense RF capabilities and enhances embedded technology critical to wireless infrastructure ▪ Industrial, medical and automotive markets provide for new business opportunities ▪ Reinforces TTM's mature A&D position ▪ Further transforms TTM's A&D business from "Build to Print" to "Build to Spec"
Increases Customer Base and Strengthens Management Team	▪ Combined customer base includes industry leaders in A&D and wireless communication infrastructure markets ▪ Strong management and engineering talent with extensive experience in the RF design ▪ Limited customer overlap results in highly diversified post-combination customer base
Cost Synergies	▪ TTM has identified $15 million in pre-tax, run rate, cost synergies which are expected to be realized within the first two years after closing ▪ Projected to be accretive to TTM's non-GAAP operating margin, adjusted EBITDA margin, non-GAAP EPS and free cash flow

Commentary from the CEOs

Tom Edman, CEO of TTM, stated: "TTM has had a long working relationship with Anaren, serving beside them on supplier councils, and has always been impressed with their RF engineering expertise. We expect that integrating our manufacturing strength with Anaren's RF engineering talent will enable us to deliver superior value-added solutions to our customers in Aerospace & Defense and our broader commercial markets. We also believe that the combination will result in meaningful synergies created by complementary capabilities that will benefit the customers and employees of both companies." Larry Sala, CEO of Anaren, stated: "This is a compelling strategic combination that makes for an exciting new chapter for Anaren. We have admired TTM's manufacturing strength for some time and believe this acquisition will accelerate the opportunities and potential for Anaren to grow its offerings. This combination also positions TTM with industry leading high frequency electronics engineering and manufacturing capabilities to better meet our customer needs."

AEROSPACE & DEFENSE

Quarterly Update
Q4 2017

Buyer Spotlight

Liberty Hall Highlights	
Headquarters	New York, NY
Founded	2011
Employees	18
Current A&D Investments	4
Realized Investments	8

Key Investment Professionals

Rowan Taylor
Partner

Rowan Taylor is the founding Partner of Liberty Hall and has over 25 years of private equity experience. Prior to founding Liberty Hall, Mr. Taylor was a Partner of Oak Hill Capital Management, a private equity firm with more than $8 billion under management.

Stuart Oran
Partner

Stuart Oran is a Partner of Liberty Hall. Prior to joining Liberty Hall, Mr. Oran served as an operating partner or advisor to several private equity firms and aerospace businesses on more than 20 transactions.

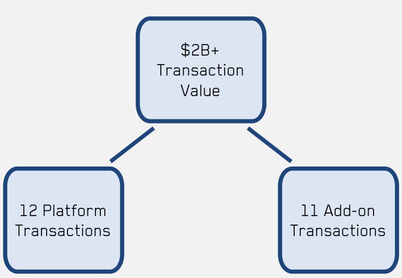
Taylor Catarozoli
Principal

Taylor Catarozoli is a Principal of Liberty Hall. Prior to joining Liberty Hall, Mr. Catarozoli was an Associate of Oak Hill Capital Management, where he worked with Mr. Taylor and Mr. Nadal.

Jack Nadal
Principal

Jack Nadal is a Principal of Liberty Hall. Prior to joining Liberty Hall, he was a Senior Vice President of Insight Equity. He was also an Associate of Oak Hill Capital Management, where he worked with Mr. Taylor and Mr. Catarozoli.

Current Transaction Characteristics



Sources: DACIS, CapIQ, company websites, market research

Liberty Hall Capital Partners

Description

Liberty Hall Capital Partners is a private equity firm with a sole focus on investments in the aerospace and defense industry. Liberty Hall's team of investment professionals consists of a close knit group with long standing relationships that are complemented by operating experience and investment expertise within the global aerospace and defense industry. Over the firm's seven-year history, Liberty Hall has led investments of over $2 billion of equity capital through 12 platform and 11 add-on acquisitions in aerospace, defense and other complementary end markets. Each acquisition is modeled after Liberty Halls' sector focus and disciplined investment approach.

Investment Strategy

Liberty Hall's investment philosophy begins with deep operating and investment expertise, along with proven management experience. All of the firm's Operating Advisors are former CEOs or senior executives within the aerospace and defense industry. The ideas and strategies generated within the group are combined with strong industry relationships to identify and develop investment theses for attractive segments. The firm partners with entrepreneurs and management teams to identify and acquire leading businesses serving these segments. Once Liberty Hall acquires a business, together with management, they develop and implement a sound, long-term strategic and operational plan to build the business as well as provide necessary capital to execute these plans organically or through strategic acquisitions.

Sector Focus and Disciplined Investment Approach

Suppliers | **Aircraft Finance** | **Service Providers** | **MRO**

Select A&D Portfolio Companies

Company	Acquired	Status	Description
Dunlop Aircraft Tyres	2017	Current	Dunlop Aircraft Tyres is a leading independent global designer, manufacturer and retreader of aircraft tires with three facilities located in the United Kingdom, United States and China.
Bromford Industries	2016	Current	Bromford Industries Limited is a leading supplier of complex engine components, fabrications and assemblies for the global aerospace and power generation industries with three facilities located in the United Kingdom.
AIM Aerospace	2016	Current	AIM Aerospace Corporation is a leading supplier of composite ducting, structural and interior parts to the global aerospace industry with five facilities located in the United States.
Accurus Aerospace Corporation	2013	Current	Accurus Aerospace Corporation is a leading Tier II supplier of highly engineered metallic parts, kits and assemblies and processing services to the global aerospace industry with four facilities located in the United States.

Platform Overview

V-22 Osprey Overview	
Type	Tiltrotor Military Aircraft
Manufacturer	Bell Helicopter & Boeing Rotorcraft Systems
First Flight	March 19, 1989
Engine Type	Rolls-Royce AE 1107C
Max Cruise Speed	270 kts
Mission Radius	428 nm (assumes avg. load)
Cockpit-Crew Seats	2 MV / 3 CV
Unit Cost	US$72.1 million
Program Cost	US$35.6 billion

Current Customers

The V-22 serves the US Marine Corps with the MV-22 variant, Air Force with the CV-22 variant and the US. president with the HMX-1.

Japan was the first international customer for the V-22 platform. Signed in 2015, Japan's contract with Bell Boeing was for five V-22s.

Recent V-22 Milestones

Year	News Release
2017	Bell Boeing V-22 Osprey Fleet Tops 400,000 Flight Hours
2015	Bell Boeing Announces Contract for First V-22 Ospreys to Japan
2013	Bell Boeing V-22 Osprey Deploys Refueling Equipment in Flight Test
2013	Bell Boeing Awarded Contract for 99 V-22 Osprey Tiltrotor Aircraft
2012	Bell Boeing V-22 program receives honors from Aviation Week
2012	Bell Boeing Delivers 1st Block of CV-22 Osprey to US Marine Corps

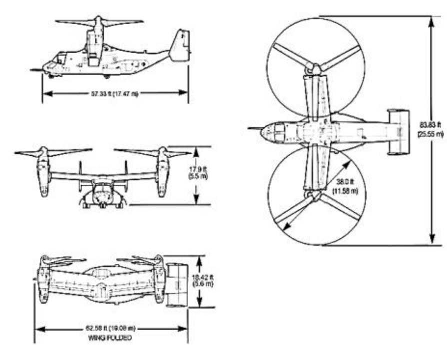
Sources: Boeing, market research, Military Factory, FI-Aeroweb, Aviation Week

V-22 Osprey Overview

Description

The V-22 Osprey (V-22) is a multi-mission, tiltrotor military aircraft with both vertical takeoff and landing features (VTOL), as well as short takeoff and landing capabilities (STOL). With its rotors in the vertical position, the V-22 can function like a helicopter with similar takeoff and landing capabilities. Once airborne, the aircraft has the ability to tilt its rotors in order to convert into a turbo prop aircraft capable of high-speed, high-altitude flight. This combination allows the V-22 to fit into an operational niche unlike any other aircraft. Although the V-22's platform allows for multiple capabilities, most missions currently use fixed wing flight 75% or more of the time. This reduces wear and tear on the aircraft, as well as operational costs.

Tilt Rotor Mechanism



V-22 Design and Features

Propulsion	Avionics	Armament	Refueling
The aircraft is powered by two Rolls-Royce AE 1107C engines through drive shafts connected to a central gear box. This allows the aircraft to power both props in an engine failure event. However, the V-22 is not generally capable of hovering on one engine.	The V-22 features a glass cockpit that incorporates four MFDs with night-vision compatibility, as well as one CDU, which displays various images, some of which include digimaps, navigation and primary flight instruments. All flight control systems are fly-by-wire, which include computerized damage control.	Primary armament for the V-22 is utilized on the loading ramp with one 7.62x51mm NATO M240 machine gun or a .50 caliber M2 machine gun. BAE Systems developed a belly-mounted remote gun turret for the platform, but the system found limited use due to weight limits and rules of engagement. Nose mounted upgrades have been studied for the future as well.	Bell Boeing is continuing to develop a roll-on/roll-off aerial fueling system for the V-22, with estimated arrival between 2019-2020. The primary goal of the program is to extend the range of the Marines F35B Joint Strike Fighters as tensions rise in the Pacific. The application has opened up numerous application possibilities for the V-22 platform in the future.

History

Beginning in 1981, the US Department of Defense enacted the Joint-Service Vertical Take-Off/Landing Experimental (JVX) program, as a result of the failed 1980 Iran Hostage Crisis rescue attempt. In January 1985, Boeing along with its Bell Textron partnership created a prototype that was formally named the "V-22" and nicknamed "Osprey." The program experienced a number of problems, including multiple prototype accidents, leading to the development of the redesigned V-22B, which replaced the original V-22A. By 1997, requirements called for production of 523 Ospreys, with the first to enter service in 1999. However, only five were flying by the end of 2002. It was not until late 2005 that the program was granted serial full-rate production and the first V-22 was formally introduced into American military service on June 13, 2007. On June 13, 2013, the Bell-Boeing V-22 program was awarded a five-year US Naval Air Systems Command (NAVAIR) contract for the production and delivery of 99 V-22 Osprey tiltrotor aircraft, including 92 MV-22 models for the Marine Corps and seven CV-22 models for the Air Force Special Operations Command. When the contract was awarded, more than 200 V-22s were in service and the fleet had amassed over 185,000 flight hours. There are now 340 V-22s currently in service.

Platform Outlook

As the V-22 enters its 11th year since its formal introduction, the platform is now being utilized in many new ways. These capabilities are specifically being realized in the Marine Corps as the close relationship between the F-35 and V-22 grows deeper. The original plan for the Marine Corps with the V-22 was very simple: transport troops on and offshore out of the range of anti-ship missiles. Now, the DoD is envisioning the Osprey as a "Swiss Army Knife" multi-function aircraft. Pictured to the right are additional applications that embody the future for the platform.

Additional Applications

AEROSPACE & DEFENSE

Quarterly Update
Q4 2017

Country Spotlight

Notable A&D Companies in Sweden

Arcam AB
- Sales: US$95.8M
- Arcam AB provides additive manufacturing for the production of various metal components
- Acquired by GE Aviation in Nov. 2016

GKN Aerospace Sweden
- Sales: US$1.0B
- Formerly known as Volvo Aero AB, was purchased from Volvo in Jul. 2012
- Develops and manufactures components for aircraft, gas turbines and rocket engines

Hexagon
- Sales: US$4.6B
- Hexagon AB offers engineering services in the aero assembly, aero engine, defense and space exploration
- Acquired Apodius GmbH in Aug. 2016, a provider of measurement solutions for composite components

SKF
- Sales: US$9.9B
- SKF AB provides products, solutions and services in rolling bearings, seals, mechatronics and lubrication systems
- The aerospace division supplies products that support airframe, aero structures and gearboxes

Trelleborg
- Sales: US$4.1B
- Trelleborg AB provides solutions for aircraft engines, flight control systems, landing gear, and safety equipment, among others
- Primary aerospace products include aircraft sealing solutions, engineered coated fabrics, fire resistant coatings and thermal insulation systems

Regional Oaklins Firm - Avantus

Adel Koubaa
Managing Partner

Anders Ingler
Partner

Sven-Ake Lewin
Partner

Sources: CapIQ, Export.gov, SKF, Business Insider and company websites
Note: Financial data as of 12.28.17

Aerospace and Defense in Sweden

Description

Despite its relatively small size, the Swedish aerospace and defense (A&D) industry is recognized as a world-class A&D region as a result of strategic importance and the country's strong focus on technology development. Employing approximately 12,000 people, the Swedish A&D industry generates about US$3.3 billion in turnover and imports around US$450 million of aircraft parts annually. The Swedish aerospace market is particularly active in cutting-edge A&D technology, such as aero engines, avionics, space applications and communications and positioning systems. Strong development of opportunities exist within the avionics, aircraft parts and components sectors due to increased airline passenger traffic and a skilled workforce. As the Swedish aerospace industry continues to grow, the defense industry also exhibits expansion opportunities. One factor of growth stems from recent Russian aggressions, which is spurring the Swedish Government to increase spending on defense from its present budget of US$5.1 billion to US$6.0 billion by 2020. Sweden's arms export industry, a US$1.2 billion market, also contributes to the strong defense industry growth, but faces challenges due to the government seeking to pass legislation barring the selling of arms to non-democratic nations. The country's top defense contractor, SAAB, has already warned if the proposed legislation were accepted, the company may have to relocate its R&D out of Sweden.

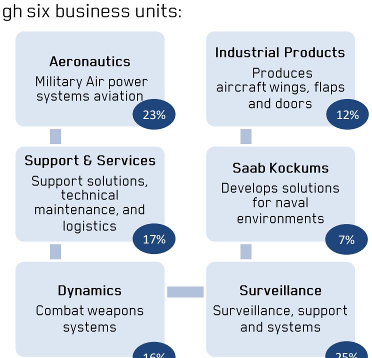
Select Recent M&A Activity in Swedish A&D

Date	Target	Acquirer	TEV (US$M)	TEV / Sales	TEV / EBITDA
12/22/17	GKN Aerospace, Applied Composites AB	Saab Dynamics AB	ND	ND	ND
12/21/17	Clyde Space Ltd.	AAC Microtec AB	$34	4.8x	NM
7/31/17	Exensor Technology AB	Bertin Technologies SAS	ND	ND	ND
4/13/17	Quintus Technologies AB	Kobe Steel Ltd.	$115	1.9x	ND
10/4/16	Safeari I Trelleborg AB	Textron Sweden AB	ND	ND	ND
9/6/16	Arcam AB	General Electric Aviation	$630	9.4x	NM
8/19/16	NanoSpace AB	GS Sweden	$3	ND	ND
8/15/16	Callenberg Technology Group	J.F. Lehman & Co	$64	ND	ND
8/15/16	ThyssenKrupp Marine Systems AB	Saab AB	$52	0.2x	ND
1/25/16	Signal Processing Devices Sweden	e2v Technologies plc	$18	4.5x	ND

SAAB Snapshot

Business Description

Founded in 1937, Saab AB provides products, services and solutions for the military, defense and civil security markets worldwide. Saab specializes in advanced technology for A&D and operates through six business units:



% = % of FY16 Sales

Key Financials (US$M)

TEV:	$5,474
Market Cap:	$5,260
LTM Revenue:	$3,759
LTM EBITDA:	$344

Note: LTM data as of 9.30.17

Featured Product Line

Saab JAS 39 Gripen

Role:	Multirole Fighter Aircraft
Engine Type:	Volvo RM12, Turbofan
Unit Cost:	US$40M-US$60M
Program Cost:	US$13.5B
Units Built:	247

ALL TRANSACTIONS – VALUE DISCLOSED

Announced Date	Target	Acquiror	Valuation Metrics: Implied TEV ($M)	TEV/ Revenue	TEV/ EBITDA	Segment	Deal Type(s)
10/02/17	Compañía Española de Sistemas Aeronáuticos SA	Héroux-Devtek Inc.	$164.3	na	na	Controls & Systems	PU, I
10/04/17	ACTech GmbH	Materialise NV	$52.9	1.3x	5.5x	Machined & Cast Parts	PR, I
10/13/17	NeoSystems Corp.	Novume Solutions, Inc.	$22.2	na	na	Government Services, IT Services and Software	PR
10/17/17	Praxis Engineering Technologies, Inc.	CSRA LLC	$235.0	na	na	Engineering and Project Management	PR
10/18/17	The Omnicon Group, Inc.	Spectris plc	$29.0	na	na	Engineering and Project Management	PR, I
10/24/17	BTP Systems, LLC	Serco Group plc	$20.0	1.0x	6.7x	Engineering and Project Management	PR, I
10/26/17	Knowles Corporation, High Performance Timing Business	Microsemi Corporation	$130.0	na	na	Sensors & C4ISR	PU
10/27/17	100% of Telefonix, Inc. and 30% in Product Development Technologies, LLC	Astronics Corporation	$104.0	na	na	Components & Subsystems	PR
10/27/17	Asian Compressor Technology Services Company Limited	MB Aerospace Newton Abbot Limited	$60.0	na	na	MRO & Logistics	PS, PB, I
10/31/17	HNZ Group Inc.	Management Buyout	$189.6	1.1x	13.8x	MRO & Logistics	PU, I
11/02/17	MesoScribe Technologies, Inc.	CVD Materials Corporation	$0.8	na	na	Sensors & C4ISR	PR
11/06/17	Mistral Solutions Pvt. Ltd.	AXISCADES Engineering Technologies Limited	$20.2	1.0x	na	Defense Electronics	PS, I
11/08/17	Anodyne Electronics Manufacturing Corp.	Structural Monitoring Systems Plc	$7.9	na	na	Components & Subsystems	PR, I
11/14/17	Trescal SA	OMERS Private Equity	$788.6	na	na	Test & Measurement	PS, PB, I
12/03/17	Anaren, Inc.	TTM Technologies, Inc.	$775.0	3.5x	14.2x	Components & Subsystems	PS
12/06/17	Fabric Development, Inc. and Textile Products, Inc.	Kordsa, Inc.	$100.0	na	na	Composites	PR, I
12/17/17	Gemalto N.V.	Thales S.A.	$6,521.4	1.8x	11.9x	Government Services, IT Services and Software	PU, I
12/21/17	Themis Computer, Inc.	Mercury Systems, Inc.	$180.0	na	na	Defense Electronics	PR

PU Public Seller | PR Private Seller | PS Private Equity Seller | PB Private Equity Buyer | I International Deal

Source(s): CapIQ, Dacis, company reports, press releases

ALL TRANSACTIONS – VALUE DISCLOSED (CONTINUED)

Announced Date	Target	Acquiror	Valuation Metrics: Implied TEV ($M)	Valuation Metrics: TEV/ Revenue	Valuation Metrics: TEV/ EBITDA	Segment	Deal Type(s)	
12/21/17	Clyde Space Ltd.	ÅAC Microtec AB (publ)	$34.1	4.8x	124.4x	Satellite, Satellite Services & Space Systems	PS	I
12/22/17	Flight Time Aviation Group, Inc.	Monster Arts, Inc.	$0.2	na	na	Government Services, IT Services and Software	PR	I

PU Public Seller PR Private Seller PS Private Equity Seller PB Private Equity Buyer I International Deal

Source(s): CapIQ, Dacis, company reports, press releases

ALL TRANSACTIONS – VALUE NOT DISCLOSED

Announced Date	Target	Acquiror	Segment	Deal Type(s)
10/02/17	Solidyn Solutions, Incorporated	Polaris Alpha	Controls & Systems	PR PB
10/02/17	MW Industries, Inc.	American Securities LLC	Machined & Cast Parts	PS PB
10/02/17	Xebec Global Corporation	Arlington Capital Partners LP	Cybersecurity, Intelligence Services and Homeland Defense	PS PB
10/03/17	Syntronics, LLC	General Atomics Corp.	Defense Electronics	PR
10/05/17	Aero Colors, Inc.	HISCO, Inc.	Composites	PR
10/05/17	Aurora Flight Sciences Corporation	The Boeing Company	Unmanned Vehicles	PR
10/10/17	Williams Electric Company, Inc.	Parsons Corporation	Government Services, IT Services and Software	PR
10/10/17	Trace 1 Calibrations	J.A. King and Company Inc.	Test & Measurement	PR
10/11/17	DXC Technology, U.S. Public Sector Business	KeyPoint Government Solutions, Inc.; Vencore Holding Corp.	Government Services, IT Services and Software	PU PB
10/12/17	Fortner Engineering & Manufacturing, Inc.	Wencor Group, LLC	MRO & Logistics	PR PB
10/12/17	Rofin-Sinar UK Ltd	CMR GmbH	Components & Subsystems	PU PB I
10/12/17	Sepang Aircraft Engineering Sdn Bhd	Airbus SE	MRO & Logistics	PR I
10/13/17	Milrem LCM OÜ	Patria Oyj	MRO & Logistics	PR I
10/13/17	VirTex Enterprises, LP	Insight Equity	Electronics Manufacturing (EMS) & Harnessing	PR PB
10/16/17	Sigma Bravo Pty Ltd	KBR, Inc.	Defense Electronics	PR I
10/16/17	C Series Aircraft Limited Partnership	Airbus SE	Aerostructures	PU I
10/17/17	SkyTrac Systems Ltd.	ACR Electronics, Inc.	Government Services, IT Services and Software	PR I
10/18/17	Scott Instrument Company	Aviation Avionics and Instruments Inc	MRO & Logistics	PR

PU Public Seller · PR Private Seller · PS Private Equity Seller · PB Private Equity Buyer · I International Deal

Source(s): CapIQ, Dacis, company reports, press releases

ALL TRANSACTIONS – VALUE NOT DISCLOSED (CONTINUED)

Announced Date	Target	Acquiror	Segment	Deal Type(s)
10/18/17	Nashua, N.H. EO/IR systems and lens assets from General Dynamics Mission Systems	Clean Align, LLC	Components & Subsystems	PU
10/19/17	Excelitas Technologies Corp.	AEA Investors LP	Components & Subsystems	PS, PB
10/19/17	Winlight System Finance S.A.	Bertin Technologies SAS	Components & Subsystems	PR, I
10/20/17	Morphick Inc	Booz Allen Hamilton Holding Corporation	Cybersecurity, Intelligence Services and Homeland Defense	PR
10/20/17	Peak Democracy Inc	OpenGov, Inc.	Government Services, IT Services and Software	PR
10/23/17	AeroPartners Inc.	Rikei Corporation	Distribution	PR, I
10/23/17	Connecticut Coining, Inc.	MavenHill Capital	Machined & Cast Parts	PR, PB
10/23/17	Primescape Solutions, Inc.	HighPoint Global, LLC	Government Services, IT Services and Software	PR
10/25/17	No Magic, Inc.	Dassault Systèmes SE	Government Services, IT Services and Software	PR, I
10/27/17	Princeton Lightwave, Inc.	Argo AI, LLC	Sensors & C4ISR	PR
10/31/17	Butterfield Industries	Raisbeck Engineering	MRO & Logistics	PR, PB
11/01/17	PaR Systems, Inc.	Management Buyout	Machined & Cast Parts	PS, I
11/01/17	F.M.I. Inc.	AE Industrial Partners, LLC	Machined & Cast Parts	PR, PB
11/01/17	Avenge Inc.	MAG Aerospace Corp.	Specialty Defense Systems and Services	PR, PB
11/02/17	ImageSat International N.V.	First Israel Mezzanine Investors Ltd.	Satellite, Satellite Services & Space Systems	PR, PB, I
11/02/17	Applied Composites Engineering Inc.	AC&A, LLC	MRO & Logistics	PR, PB
11/02/17	Advanced Technical and Educational Consultants, Inc.	L2 Defense, Inc.	Government Services, IT Services and Software	PR
11/02/17	Dominion Consulting Inc.	TeraThink Corporation	Government Services, IT Services and Software	PR

PU Public Seller PR Private Seller PS Private Equity Seller PB Private Equity Buyer I International Deal

Source(s): CapIQ, Dacis, company reports, press releases

ALL TRANSACTIONS – VALUE NOT DISCLOSED (CONTINUED)

Announced Date	Target	Acquiror	Segment	Deal Type(s)		
11/06/17	Mach Aero Bretigny Rectification SAS and Mach Aero Components Private Ltd.	NMB-Minebea UK Ltd.; NMB Minebea S.A.R.L.	Machined & Cast Parts	PR		I
11/06/17	Interface Displays & Controls, Inc.	Radiant Power Corporation	Controls & Systems	PR		
11/07/17	Tecnologie Industriali e Aeronautiche S.p.A.	Elettronica Aster S.p.A.	Components & Subsystems	PR		I
11/09/17	Talon Innovations Corporation	Ichor Holdings, LLC	Machined & Cast Parts	PS		
11/09/17	NDT Limited	Element Materials Technology Group Limited	Test & Measurement	PR	PB	I
11/10/17	APFT Maintenance Training Sdn Bhd	Management Buyout	Simulation & Training Systems	PR		I
11/14/17	Whitney, Bradley and Brown, Inc.	H.I.G. Capital, LLC	Government Services, IT Services and Software	PR	PB	
11/14/17	Cadence Aerospace, LLC	Arlington Capital Partners LP	Components & Subsystems	PS	PB	
11/14/17	Surrey Satellite Technology US LLC	General Atomics Corp.	Satellite, Satellite Services & Space Systems	PU		I
11/14/17	ESM Group Inc., Specialty Metals Business	Luxfer Holdings PLC	Machined & Cast Parts	PU		I
11/15/17	Hypori	Intelligent Waves, LLC	Government Services, IT Services and Software	PR		
11/16/17	SES S.A.	Management Buyout	Satellite, Satellite Services & Space Systems	PU		I
11/16/17	Rubicon Technology, Inc.	Bandera Partners LLC	Sensors & C4ISR	PU	PB	
11/20/17	ASCO Industries nv/sa	Schmolz + Bickenbach AG	Machined & Cast Parts	PR		I
11/21/17	Enterprise Applications, Inc.	Special Investigations Limited Company	Government Services, IT Services and Software	PR		
11/21/17	Arc Drilling, Inc.	Washington Equity Partners	Machined & Cast Parts	PR	PB	
11/22/17	Aero-Care Pty Ltd.	Swissport International Ltd.	MRO & Logistics	PS		I
11/27/17	SGI-Group B.V.	FinTech Global Trading Incorporated	Engineering and Project Management	PS		I

PU Public Seller | PR Private Seller | PS Private Equity Seller | PB Private Equity Buyer | I International Deal

Source(s): CapIQ, Dacis, company reports, press releases

AEROSPACE & DEFENSE

Quarterly Update
Q4 2017

ALL TRANSACTIONS – VALUE NOT DISCLOSED (CONTINUED)

Announced Date	Target	Acquiror	Segment	Deal Type(s)
11/27/17	Astrodyne TDI Corporation	Tinicum Incorporated	Controls & Systems	PS PB
11/27/17	Safair Operations (Pty) Ltd	SA Airlink (Pty) Ltd	MRO & Logistics	PR I
11/27/17	1st American Systems and Services LLC	ABSS Solutions, Inc.	Government Services, IT Services and Software	PR
11/27/17	Meggitt PLC's South Wind Heater Product Line	Hartzell Engine Technologies	Aircraft Interiors	PU I
11/28/17	Encore Composites Holdings, Inc	AE Industrial Partners, LLC	Composites	PR PB
11/28/17	Aveillant Ltd	Thales S.A.	Sensors & C4ISR	PS I
11/29/17	True Position Technologies, Inc.	HBD Industries, Inc.	Machined & Cast Parts	PR
11/30/17	GEM City Engineering and Manufacturing	CapitalWorks, LLC	Machined & Cast Parts	PS PB
12/01/17	Malabar Holding Co.	Tronair, Inc.	MRO & Logistics	PR PB
12/04/17	Substantially All Of Laser Depth Dynamics Inc. Business	IPG Photonics Corporation	Machined & Cast Parts	PR I
12/05/17	Bournemouth International Airport Ltd.	Regional & City Airports Holdings Limited	MRO & Logistics	PR I
12/06/17	GAP Solutions Inc.	System One Holdings, LLC	Government Services, IT Services and Software	PS PB
12/07/17	ACTA Inc	Advanced Core Concepts, LLC	Engineering and Project Management	PR
12/01/17	Professional Services Group of Merlin International, Inc.	Xator Corporation	Cybersecurity, Intelligence Services and Homeland Defense	PR
12/08/17	Aerospace & Defense (A&D) Business of Oxford Performance Materials Inc.	Hexcel Corporation	Composites	PR
12/13/17	Antkowiak Design Group, Inc.	Chenega Corporation	Engineering and Project Management	PR
12/13/17	Crouzet Automatismes SAS	LBO France	Components & Subsystems	PR PB I
12/13/17	CDI Aerospace & Industrial Equipment	Belcan, LLC	Engineering and Project Management	PS PB

PU Public Seller PR Private Seller PS Private Equity Seller PB Private Equity Buyer I International Deal

Source(s): CapIQ, Dacis, company reports, press releases

ALL TRANSACTIONS – VALUE NOT DISCLOSED (CONTINUED)

Announced Date	Target	Acquiror	Segment	Deal Type(s)
12/14/17	Arex d.o.o. SENTJERNEJ	Rsbc Private Equity CZ A.S.	Specialty Defense Systems and Services	PR PB I
12/15/17	Wright Tool Company, Inc.	Federal Resources Supply Company	Distribution	PR
12/18/17	Janus Global Operations	DC Capital Partners, LLC	Government Services, IT Services and Software	PR PB
12/19/17	Metals Testing Company, Inc. (MTC)	Element Materials Technology Group Limited	Test & Measurement	PR PB I
12/20/17	Triton Manufacturing Company, Inc.	Molex, LLC	Components & Subsystems	PR
12/21/17	SCHROTH Safety Products GmbH	Perusa Partners	Aircraft Interiors	PU PB I
12/21/17	N. Sundin Dockstavarvet AB and Muskövarvet AB	ThyssenKrupp Marine Systems AB	MRO & Logistics	PR I
12/22/17	EnCore Composite Structures, Inc.	AC&A, LLC	Composites	PR PB
12/22/17	MTS Technologies, Inc.	Innové LLC	Government Services, IT Services and Software	PR
12/22/17	GKN Aerospace Applied Composites AB	Saab Dynamics AB	Composites	PU I
12/23/17	Diamond Aircraft Industries GmbH	Wanfeng Aviation Industry Co., Ltd.	Aerostructures	PR I
12/29/17	PrimeFlight Aviation Services, Inc.	The Carlyle Group L.P.	MRO & Logistics	PR PB
12/31/17	Aernnova Aerospace S.A.	PI 1; Everest Holdings; ANV Co-Invest	Aerostructures	PR PB I

PU Public Seller | PR Private Seller | PS Private Equity Seller | PB Private Equity Buyer | I International Deal

Source(s): CapIQ, Dacis, company reports, press releases