



INDUSTRY UPDATE

AEROSPACE & DEFENSE
Q4 2019

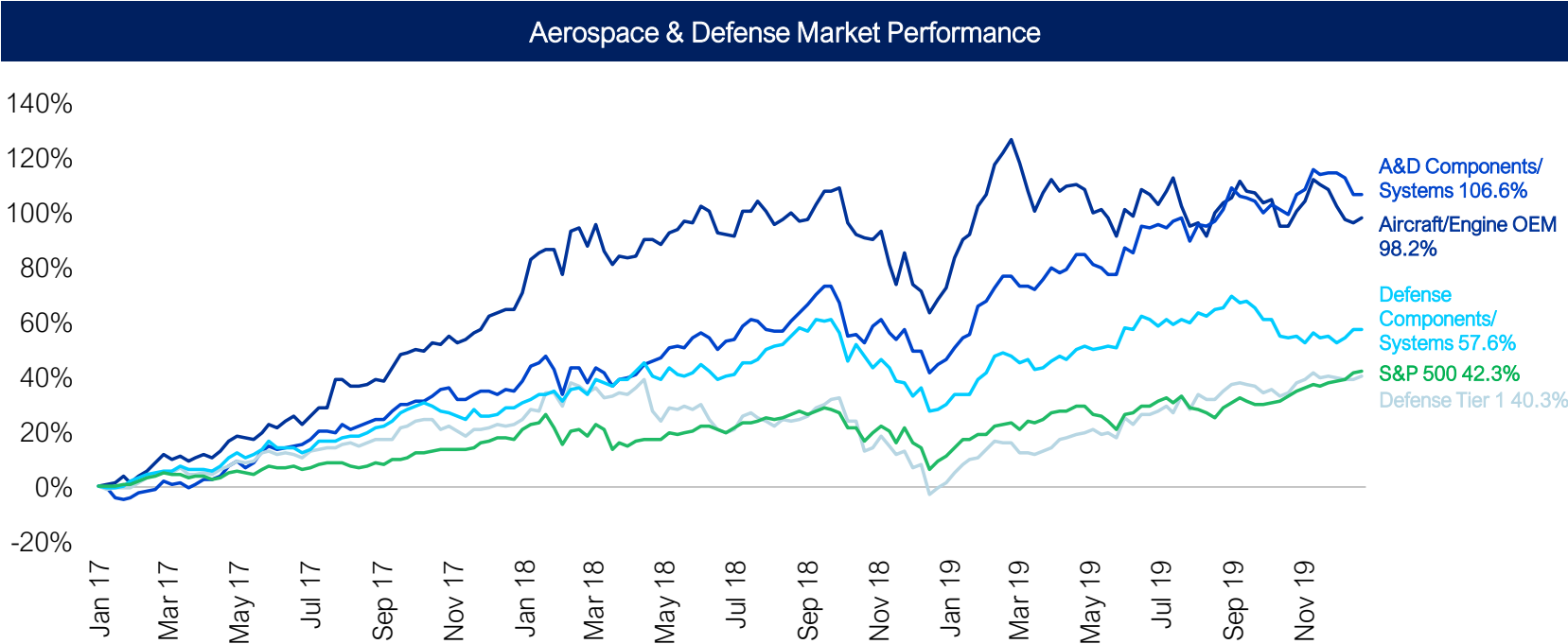


GREENWICH
CAPITAL GROUP

GCG INDUSTRY UPDATE | Aerospace & Defense

Public Market Performance

In Q4 2019, the Aerospace & Defense (“A&D”) index underperformed the broader U.S. equity market for the first time in 2019. However, in the three-year period ending December 31, 2019, the S&P 500 returned 42.3%, falling short of the overall gains by most segments of the A&D industry. Order backlog and deliveries in the commercial aerospace sector experienced a decline in 2019 amid ongoing issues related to specific aircraft, however the long-term demand outlook for commercial aircraft continues to be robust. In December, the FY20 U.S. Defense budget was established at \$738B, representing an approximately 3% increase over 2019.



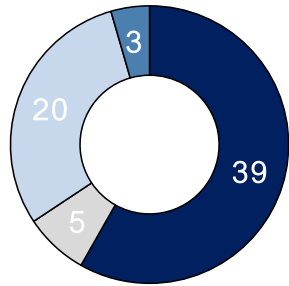
Source: S&P Capital IQ
Note: All values based on publicly available data as of 12/31/2019



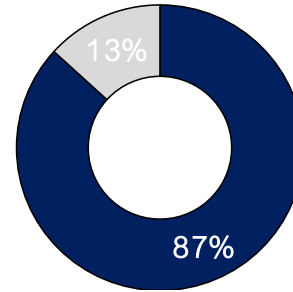
GCG INDUSTRY UPDATE | Aerospace & Defense

M&A Activity

Q4 2019
Transaction Volume:
67



- Aerospace
- Defense IT/Services
- Defense
- Space



- Strategic Buyer
- Financial Buyer

Select Transactions:

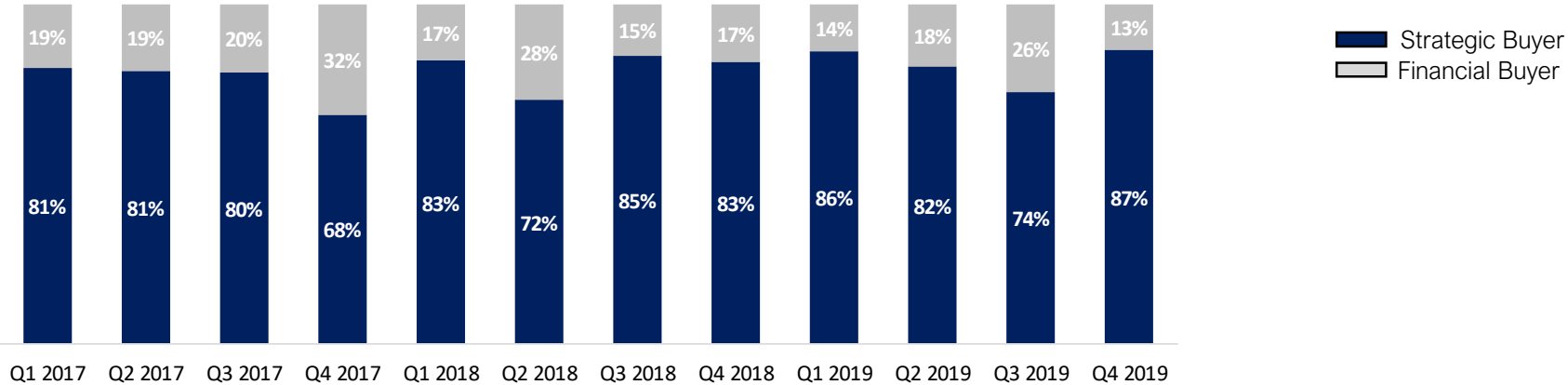
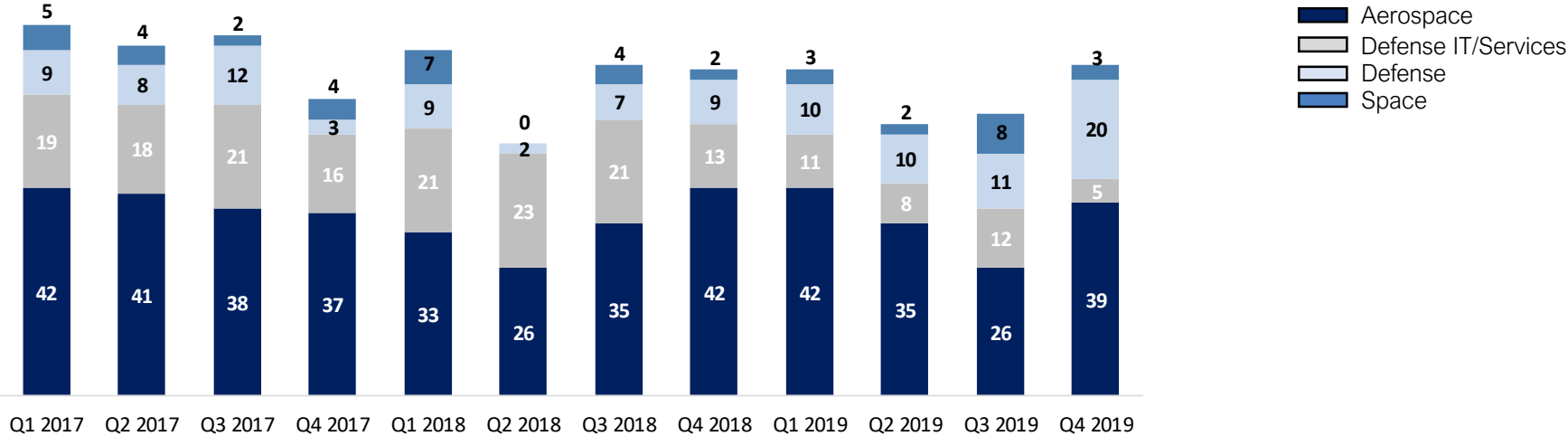
Announced	Target / Seller	Buyer	Transaction Value (\$mm)	Target Description
12/24/2019	Ellison Surface Technologies, Inc	Bodycote plc (LSE:BOY)	\$200	Ellison provides thermal spray and engineered coating surface technology services to A&D and other industrial markets (25x EBITDA)
12/17/2019	Dynetics, Inc.	Leidos Holdings, Inc. (NYSE:LDOS)	\$1,650	Dynetic is a leading provider of high-technology, mission-critical services and solutions to the U.S. Government (12.6x EBITDA)
12/16/2019	Quell Corporation, Inc.	Electronic Technologies Group, Inc.	-	Quell designs and manufactures EMI/RFI and transient protection solutions for a wide variety of connectors specific to the A&D market
12/10/2019	Whitmor Plastic Wire & Cable Corp.	BJG Electronics, Inc. (Rockwood Equity Partners)	-	Whitmore Plastic is a provider of high-performance wire, cable and tubing to the military, aerospace and satellite industries
12/02/2019	Firth Rixson Forgings Limited (Arconic Inc. (NYSE:ARNC))	Arlington Capital Partners	-	Located in the UK, Firth Rixson provides complex closed die forgings and forged discs for OEM and Tier 1 A&D engine customers
12/02/2019	Torotel, Inc. (OTCPK:TTLO)	Standex International Corporation (NYSE:SXI)	\$56	Torotel, Inc. is a designer and manufacturer of custom magnetics products primarily for the aerospace and defense industries (26.8x EBITDA)
11/26/2019	901 D LLC	Curtiss-Wright Corporation (NYSE:CW)	\$132	901D's solutions are utilized in mission-critical applications by protecting weapons systems aboard all major U.S. Navy aircraft carriers and ships
11/25/2019	Novaria Holdings, LLC	KKR & Co. Inc. (NYSE:KKR)	-	Novaria Group is an independent supplier of complex, highly engineered components and specialty processes for the aerospace and defense industry
11/22/2019	Airborne Technologies, Inc.	Kellstrom Defense Aerospace, Inc.	-	ATI manufactures complex defense aircraft parts including landing gear doors and wing leading edges for the F-16 and C-130 B-H aircraft programs
11/12/2019	Numet Machining Techniques Inc.	Bromford Industries Limited (Liberty Hall Capital Partners)	-	Numet is a complementary US-based provider of aerospace engine machined components requiring complex geometries and exotic alloys
11/05/2019	Bal Seal Engineering, Inc.	Kaman Corporation (NYSE:KAMN)	\$330	Bal Seal manufactures precision springs, seals, and contacts to the medical technology and A&D end markets (12.5x EBITDA)
10/28/2019	American Microwave Corporation	Ironwave Technologies LLC	-	American Microwave is a designer and manufacturer of control components and subsystems for the communication and electronic warfare markets
10/23/2019	Wenzel Associates Inc	BEI Precision Systems & Space Co. Inc. (J.F. Lehman)	-	Wenzel is a manufacturer of crystal oscillators, fixed frequency systems and integrated microwave assemblies for military, space, and commercial markets
10/21/2019	Draka Fileca SAS	Carlisle Companies Incorporated (NYSE:CSL)	\$81	Draka is a provider of interconnect solutions providing high-end cable solutions to European A&D and Space customers (14.6x EBITDA)
10/09/2019	Nobles Worldwide, Inc	Ducommun Incorporated (NYSE:DCO)	\$77	Nobles is a designer and manufacturer of ammunition handling systems for military aircraft, helicopters, ground vehicles and shipboard systems

Source: Capital IQ and GCG research



GCG INDUSTRY UPDATE | Aerospace & Defense

M&A Trends

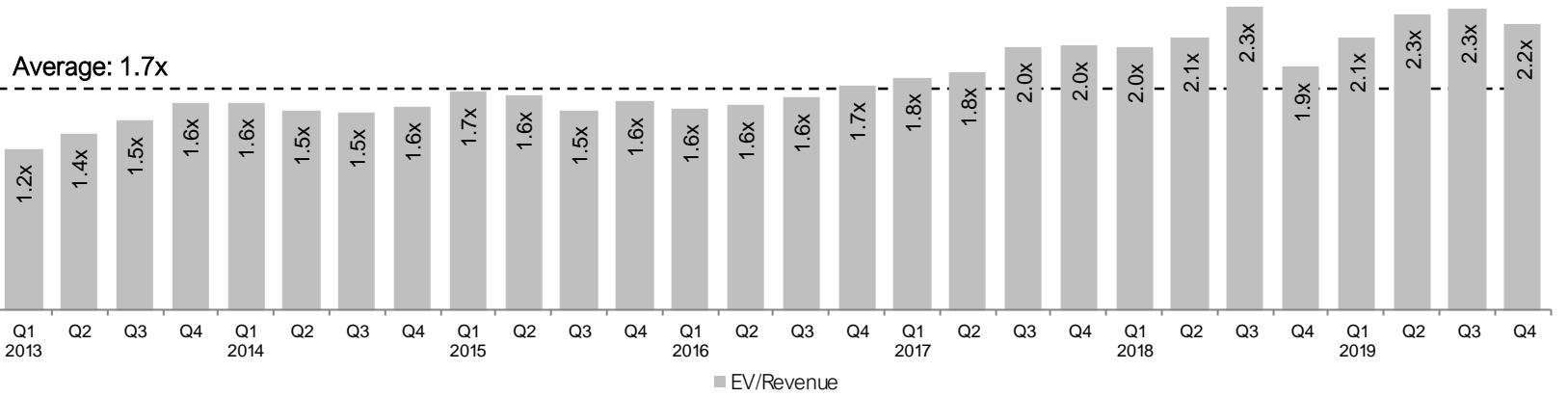
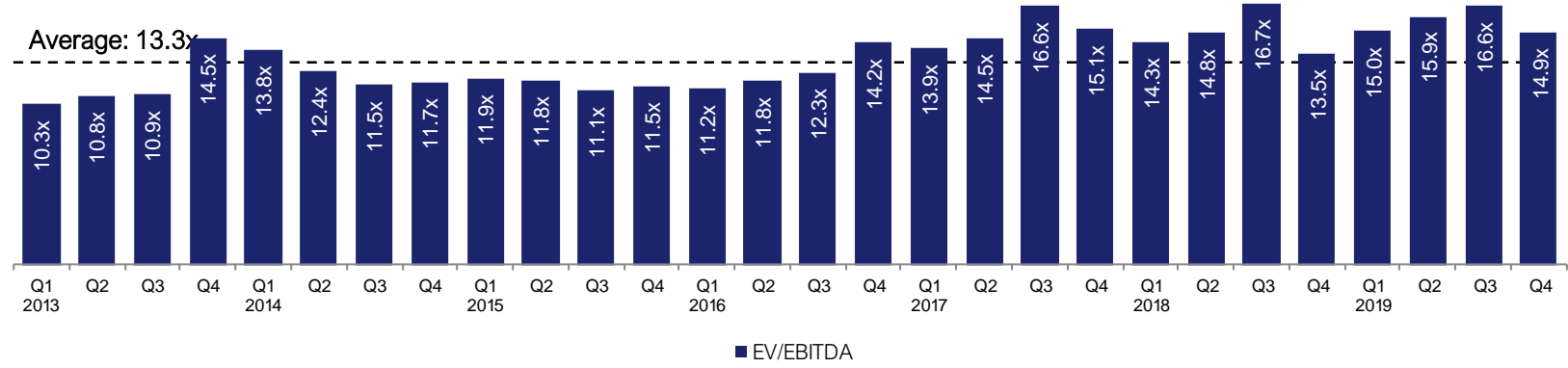


Source: S&P Capital IQ & GCG Research
 Note: All values based on publicly available data as of 12/31/2019



GCG INDUSTRY UPDATE | Aerospace & Defense

Public Company Trading Multiples



Source: S&P Capital IQ
 Note: All values based on publicly available data as of 12/31/2019



GCG INDUSTRY UPDATE | Aerospace & Defense

Public Comparable Companies

Company Name	Enterprise	Revenue	Price Change		LTM Margins		TEV / LTM:	
	Value (\$mils)	(\$mils)	3 month	12 month	Gross	EBITDA	Revenue	EBITDA
Aircraft/Engine OEM								
The Boeing Company	\$198,610	\$86,989	(14.4%)	1.0%	13.2%	7.5%	2.3x	30.3x
Airbus SE	\$119,597	\$75,732	12.7%	52.3%	14.5%	9.7%	1.6x	16.2x
Rolls-Royce Holdings plc	\$20,552	\$20,491	(7.2%)	(14.5%)	12.5%	3.8%	1.0x	26.4x
MTU Aero Engines AG	\$14,688	\$5,073	7.5%	57.5%	20.6%	17.5%	2.9x	16.6x
Textron Inc.	\$13,707	\$13,345	(8.9%)	(3.0%)	16.8%	12.3%	1.0x	8.3x
Bombardier Inc.	\$13,663	\$15,855	10.0%	0.0%	13.0%	5.8%	0.9x	15.0x
Dassault Aviation SA	\$5,786	\$7,389	(7.2%)	(5.2%)	35.6%	10.3%	0.8x	7.6x
Embraer S.A.	\$2,995	\$4,770	14.2%	(12.4%)	16.8%	4.9%	0.6x	12.9x
Mean	\$38,702	\$28,705	0.8%	9.5%	17.9%	9.0%	1.4x	16.7x
Median	\$14,197	\$14,600	0.2%	(1.5%)	15.6%	8.6%	1.0x	15.6x

Source: S&P Capital IQ

Note: All values based on publicly available data as of 12/31/2019



GCG INDUSTRY UPDATE | Aerospace & Defense

Public Comparable Companies (Cont'd)

Company Name	Enterprise	Revenue	Price Change		LTM Margins		TEV / LTM:	
	Value (\$mils)	(\$mils)	3 month	12 month	Gross	EBITDA	Revenue	EBITDA
A&D Components/Systems								
Safran SA	\$66,359	\$27,434	(1.9%)	28.0%	45.3%	18.8%	2.4x	12.9x
TransDigm Group Incorporated	\$45,644	\$5,223	7.6%	64.7%	55.5%	44.5%	8.7x	19.6x
HEICO Corporation	\$14,096	\$2,056	(8.6%)	(8.6%)	39.6%	26.6%	6.9x	25.8x
Woodward, Inc.	\$8,332	\$2,900	9.8%	59.4%	24.4%	16.7%	2.9x	17.2x
Spirit AeroSystems Holdings, Inc.	\$8,287	\$7,739	(11.4%)	1.1%	15.2%	15.3%	1.1x	7.0x
Meggitt PLC	\$8,203	\$2,795	11.4%	44.9%	35.8%	16.1%	2.9x	18.2x
Hexcel Corporation	\$7,331	\$2,352	(10.7%)	27.9%	27.4%	24.0%	3.1x	13.0x
Triumph Group, Inc.	\$2,790	\$3,179	10.4%	119.7%	16.3%	7.3%	0.9x	12.1x
AAR Corp.	\$1,806	\$2,195	9.4%	20.8%	15.8%	7.7%	0.8x	10.7x
Senior plc	\$1,307	\$1,448	(0.8%)	(5.1%)	20.0%	11.8%	0.9x	7.7x
Astronics Corporation	\$1,054	\$777	(4.9%)	(8.2%)	22.6%	11.6%	1.4x	11.7x
Ducommun Incorporated	\$823	\$698	19.2%	39.1%	20.7%	11.6%	1.2x	10.2x
Magellan Aerospace Corporation	\$684	\$773	(3.6%)	(1.3%)	16.3%	15.0%	0.9x	5.9x
Héroux-Devtek Inc.	\$738	\$447	13.3%	55.4%	17.1%	14.4%	1.7x	11.5x
Latécoère S.A.	\$552	\$811	3.3%	35.9%	35.1%	6.7%	0.7x	10.1x
Mean	\$11,200	\$4,055	2.8%	31.6%	27.1%	16.5%	2.4x	12.9x
Median	\$2,790	\$2,195	3.3%	28.0%	22.6%	15.0%	1.4x	11.7x

Source: S&P Capital IQ

Note: All values based on publicly available data as of 12/31/2019



GCG INDUSTRY UPDATE | Aerospace & Defense

Public Comparable Companies (Cont'd)

Company Name	Enterprise	Revenue	Price Change		LTM Margins		TEV / LTM:	
	Value (\$mils)	(\$mils)	3 month	12 month	Gross	EBITDA	Revenue	EBITDA
Defense Tier 1								
Lockheed Martin Corporation	\$121,971	\$58,345	(0.2%)	48.7%	14.0%	15.8%	2.1x	13.2x
Northrop Grumman Corporation	\$72,677	\$33,276	(8.2%)	40.5%	20.6%	15.1%	2.2x	14.5x
General Dynamics Corporation	\$65,326	\$38,955	(3.5%)	12.2%	17.7%	14.0%	1.7x	12.0x
Raytheon Company	\$64,626	\$28,694	12.0%	43.3%	26.9%	15.7%	2.3x	14.3x
BAE Systems plc	\$28,540	\$22,027	6.7%	27.8%	63.3%	11.7%	1.3x	11.1x
Huntington Ingalls Industries, Inc.	\$11,986	\$8,686	18.5%	31.8%	18.1%	11.2%	1.4x	12.3x
Leonardo S.p.a.	\$11,825	\$14,321	(0.3%)	33.4%	37.0%	11.8%	0.8x	7.0x
Saab AB (publ)	\$5,129	\$3,651	16.8%	(3.0%)	23.0%	10.8%	1.4x	13.0x
Mean	\$47,760	\$25,994	5.2%	29.3%	27.6%	13.3%	1.6x	12.2x
Median	\$46,583	\$25,361	3.3%	32.6%	21.8%	12.9%	1.5x	12.6x

Source: S&P Capital IQ

Note: All values based on publicly available data as of 12/31/2019



GCG INDUSTRY UPDATE | Aerospace & Defense

Public Comparable Companies (Cont'd)

Company Name	Enterprise	Revenue	Price Change		LTM Margins		TEV / LTM:	
	Value (\$mils)	(\$mils)	3 month	12 month	Gross	EBITDA	Revenue	EBITDA
Defense Components/Systems								
L3Harris Technologies, Inc.	\$50,819	\$9,690	(5.2%)	47.0%	31.8%	21.5%	5.2x	24.4x
Thales S.A.	\$27,372	\$18,881	(9.7%)	(11.1%)	25.7%	11.2%	1.4x	12.9x
Elbit Systems Ltd.	\$7,964	\$4,265	(6.0%)	35.6%	27.1%	10.3%	1.9x	18.1x
FLIR Systems, Inc.	\$7,475	\$1,846	(1.0%)	19.6%	50.3%	22.2%	4.0x	18.2x
Mercury Systems, Inc.	\$3,737	\$688	(14.9%)	46.1%	44.1%	18.9%	5.4x	28.8x
Aerojet Rocketdyne Holdings, Inc.	\$3,496	\$1,896	(9.6%)	29.6%	19.7%	14.9%	1.8x	12.4x
Cubic Corporation	\$2,398	\$1,496	(9.7%)	18.3%	28.8%	9.4%	1.6x	17.0x
Ultra Electronics Holdings plc	\$2,256	\$1,021	12.6%	69.0%	28.7%	15.2%	2.2x	14.5x
Kratos Defense & Security Solutions, Inc.	\$2,133	\$697	(3.1%)	27.8%	26.9%	9.1%	3.1x	33.5x
AeroVironment, Inc.	\$1,184	\$333	15.3%	(9.1%)	43.1%	16.0%	3.6x	22.2x
Chemring Group PLC	\$994	\$433	31.6%	55.0%	72.4%	18.0%	2.3x	12.7x
Espey Mfg. & Electronics Corp.	\$42	\$34	(8.9%)	(13.3%)	21.2%	9.6%	1.2x	12.7x
Mean	\$9,156	\$3,440	(0.7%)	26.2%	35.0%	14.7%	2.8x	19.0x
Median	\$2,015	\$1,259	(5.6%)	28.7%	28.8%	15.1%	2.3x	17.5x
Aerospace & Defense Mean	\$24,408	\$12,551	1.9%	25.6%	27.7%	14.0%	2.2x	15.2x
Aerospace & Defense Median	\$7,331	\$3,651	(0.8%)	27.9%	23.0%	12.3%	1.7x	13.0x

Source: S&P Capital IQ

Note: All values based on publicly available data as of 12/31/2019



GCG INDUSTRY UPDATE | Aerospace & Defense

Aerospace & Defense Expertise

GCG's Aerospace & Defense ("A&D") team has an extensive industry background formed by working with dozens of clients across nearly all aspects of the commercial aerospace, regional jet, business jet, helicopter, military aircraft, and defense supply chain continuum. With experience serving private and publicly traded A&D companies in the U.S. and abroad, GCG has a deep understanding of the trends and dynamics affecting this increasingly global industry.

More about Greenwich Capital Group

Greenwich Capital Group ("GCG") is a middle market focused advisory firm offering a range of investment banking and consulting services to private companies, public companies and private equity investors. For additional perspective or to discuss M&A related opportunities in the aerospace & defense sector, please reach out to GCG's A&D practice leader, Peter Frankfort. For more information, please visit www.greenwichgp.com.



Peter Frankfort

Managing Director

Aerospace & Defense Leader

pfrankfort@greenwichgp.com

O: (216) 245-6698

M: (313) 919-5592

Data Sources: We have based our findings on data provided by industry recognized sources. Data and information for this publication was collated from the S&P Capital IQ database. For more information on this or anything else related to our research, please email info@greenwichgp.com.

Disclaimer: This publication contains general information only and Greenwich Capital Group, LLC is not, by means of this publication, rendering professional advice or services. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser. Greenwich Capital Group, LLC shall not be responsible for any loss whatsoever sustained by any person who relies on this publication.