



Cassel Salpeter & Co.  
INVESTMENT BANKING

**Aviation Investment Banking  
Q2 2019 Update**

Confidential



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**Representative Assignments:**

- Sale: Gulfstream International Airlines
- Sale: Tradewinds Engine Group



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**Representative Assignments:**

- Valuation: Flightstar Aircraft Services
- Valuation: Global Engine Maintenance
- Solvency: AmeriJet International
- Valuation: Avborne Heavy Maintenance



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**Representative Assignments:**

- Capital Raise: Avenger Flight Group
- Capital Raise: Diversified Aero Services
- Capital Raise: Alaris Aerospace Systems



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**Philip Cassel**  
Director



**Marcus Wai**  
Vice President



**Chris Mansueto**  
Vice President



**Laura Salpeter**  
Vice President



**Julian Astrove**  
Analyst



**Daniela Lopez**  
Analyst

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**PUBLIC MARKETS OVERVIEW**

- **State of the industry** - The aviation industry has been in a long-term expansion mode, supported by record order books and skyrocketing passenger traffic. These new opportunities have brought about a series of industry challenges that must be addressed in order to sustain profitable growth.
    - Over the next 20 years, the global commercial aircraft fleet is expected to double to ~45,000 aircraft, driven by increased air travel due to an expanding middle class in emerging economies. Meanwhile, new aircraft platforms and engines are emerging as a result of changing customer demand, the industry's relentless pursuit of cost reduction, and entry-into-service periods that have been characterized by a series of painful lessons and complex issues.
  - **Volatility in the geopolitical and economic environment** - Although the global economy has risen from the ashes of the financial crisis in 2007-2008, and the economic outlook is reasonable, uncertainty remains, most notably with the US-China trade dispute and the unknown Brexit impact causing instability in markets worldwide. An economic slowdown in any of the key markets for A&D players could potentially result in tightening in the credit markets; low liquidity; and extreme volatility in the credit, currency, commodity and equity markets, adding that a slowdown could cause airlines to review their order intake strategies and postpone or even cancel existing aircraft orders.
    - Two indicators in the aviation industry may be pointing to an economic downturn: declining demand for air cargo and a “peak” in aircraft orders last year, according to Peter Harbison, the executive chairman of CAPA Centre for Aviation. He explained that cargo demand is typically seen as a forward indicator of not just the airline industry, but where the economy generally is heading, and that Cargo is now declining “fairly steeply,” triggered by the trade uncertainties of Brexit, and tariff tensions between the U.S. and China. Harbison concludes that the “peak” in aircraft orders in 2018 may also be another indicator of a slowing global economy, which generally seems to precede the year when things turn down. June 2019 - Shirley Tay & CNBC's Leslie Josephs.
  - **Expanding supply chain** - A record number of new aircraft deliveries are set to keep the supply chain extremely busy during the coming years. To meet the demand, the entire supply chain must ramp up their efforts and investments, ensuring timely deliveries while, at the same time, maintaining high quality and keeping costs somewhat controlled; a challenging task that could leave many suppliers financially vulnerable.
  - **Growth in OEM aftermarket presence** - The threat of continued and intensified competition with OEMs, together with the rising cost of labor and materials, means MROs and aftermarket parts distributors will need to figure out how to maintain their market share, embracing new competitive strategies and technologies. The heightened presence of OEMs in the aftermarket is not exactly new, it has been a reality for the MRO industry for many years now. As of late, however, OEMs within the MRO sector have seen immense growth and have goals for even more.
- Aftermarket industry consolidation** - The Airbus and Boeing duopoly have set tremendously ambitious goals for themselves—Airbus set a goal to double their aftermarket spending by 2035, adding up to a total of \$1.8 trillion by 2035, or annual growth rate of 4.6 percent. Similarly, Boeing set the goal of tripling their MRO revenue over the next decade.
- The ability for OEMs to rapidly seize market share in the aftermarket is thanks, in large part, to their hold on intellectual property (IP), primarily true of engine and component manufacturers. For MROs, aftermarket parts distributors and operators, ensuring a competitive position in the future will likely take collaboration, along with some out-of-the-box thinking. Though MROs have historically not been perceived as industry innovators, they must find new ways to partner with aircraft manufacturers and third-party specialists to create and drive improvements in asset productivity and future aircraft reliability.

- **Managing climbing material costs** - The results of the current power balance, with regard to IP ownership, can be seen, with material prices climbing. This is a trend that is expected to continue with OEMs continuing to grow by imposing greater usage restrictions on existing IP and licenses. As OEMs solidify their place in the aftermarket, MROs and operators are trying to create strategies that insulate themselves from rising material costs by partnering with OEMs and upping their reliance on advanced technologies, predictive maintenance and Used Serviceable Materials (USM), though none of these strategies are foolproof.
  - A sound USM and aftermarket strategy depends on having an adequate supply, by scrapping out-of-service aircraft for the parts and then repurposing them in working planes.
- **Managing and retaining talent** - Due to the influx of new technologies and processes and the relentless focus on cost reduction, companies in the aviation industry require, perhaps more than any other industries, a talented, engaged and increasingly specialized workforce. Rising labor costs in the MRO industry is due in part to a lack of supply, driven by an aging workforce, coupled with a dwindling supply of newly educated and trained maintenance technicians.
  - The specialized nature of the aviation industry compels companies to hire and retain the skilled personnel necessary to perform the business-critical processes. The “people” challenges can be seen through; ineffective succession planning, limited options for talent management and mobility in the industry.
- **Managing M&A and partnership opportunities** - Collaboration within the supply chain is a hot topic in the industry these days. M&A (mergers and acquisitions) transactions and partnerships can provide clear financial benefits, and complement a company’s existing products, technologies, services and customer base.
  - While evaluating new M&A transactions, companies are required to make decisions regarding the value of business opportunities, technologies, other assets, and cost of potential liabilities. Poor M&A decisions might result in an overvaluation of the acquired business, failure in achieving synergies, inability to retain talent, and financial challenges. Put your “A” team of Advisors together to proactively look at not just the apparent opportunities in front of you, but, as importantly, towards the creative possibilities in the marketplace.
- **Managing cybersecurity events** - As more airlines, OEMs and MROs pursue big data analytics and predictive maintenance, the risk of cyber breaches increases. Cyber threats are becoming a serious risk to all the players in the aviation supply chain, and a growing threat to the MRO industry as it digitizes. The MROs, with access to major airlines and engine component parts makers, could be a perfect target as an entry point to the global supply chain of airlines, with the potential to cause catastrophic damage within the industry and potentially to international commerce.
  - Ultimately, MROs will need to closely consider their cybersecurity needs for their internal protection, and for the industry and global economy as a whole.
- **Managing foreign currency and commodity price fluctuations** – Most A&D companies operate globally, and many have income statement and balance sheet exposure, due to the volatility in less stable global currency and exchange rates. Financial performance is also affected by price fluctuations in key commodities or raw materials, such as aluminum, titanium, and composites that can greatly effect on the manufacturing costs, as well as the profitability of the entire supply chain.
  - With thoughtful planning, and the proactive collaboration with your financial lenders (hedging strategies), sponsors and overseas advisors (supply chain data & analysis) the risk can be significantly mitigated.

**June 9 - United Technologies Corporation (NYSE:UTX) entered into an agreement to acquire Raytheon Company (NYSE:RTN) for \$86.8 billion in an all-stock merger** of equals transaction. Upon completion of the merger, United Technologies's shareowners will own 57% and Raytheon shareowners will own 43% of the combined company.

The combined company, **Raytheon Technologies Corporation (NYSE:RTX)** will be headquartered in the Boston Metro Area. The merger creates a \$74 billion in annual sales behemoth, combining Raytheon's leading defense businesses, with United Technologies dominant commercial aerospace companies: Collins Aerospace and Pratt & Whitney. The company would be second only to Boeing's \$101 billion in revenue within the U.S. aerospace and defense sector (Forbes 500 rankings by revenue).

- Prior to closing the transaction, United Technologies will complete the previously announced separation of its commercial businesses, Otis and Carrier, from its other businesses. Under the deal, the new Raytheon Technologies will consolidate its operations into four business operating groups: intelligence and aerospace, defense and missile systems, Collins Aerospace and Pratt & Whitney (jet engine-maker).
- The deal brings together two companies that have been integral to the U.S. technological explosion in the past nearly 100 years. United Technologies's list of accomplishments range from transmitting the first photo via satellite to receiving the first GPS signal. Raytheon's engineers invented both the microwave oven and the Patriot missile. In 1997, Raytheon acquired trailblazing Hughes Aircraft, which was founded by late billionaire Howard Hughes.\*

**June 29 - Harris Corporation (NYSE:HRS) and L3 Technologies, Inc. (NYSE:LLL) completed their \$34 billion all-stock merger** of equals transaction, with Harris shareholders owning 54% and L3 shareholders owning 46% of the combined company.

The Company is being rebranded as **L3Harris Technologies, Inc. (NYSE:LHX)**, and will employ 48,000 people, including some 22,500 scientists and engineers, and will be headquartered in Melbourne, Fla. The merger will position L3 Harris Technologies as the sixth largest defense contractor by revenue (\$18 Billion), following Lockheed Martin, Northrop Grumman, Boeing, Raytheon and General Dynamics.

- Both L3 and Harris divested businesses prior to the merger announcement last fall. L3 closed the sale of a trio of businesses in 2018: aviation logistics and supply chain company Vertex; rotary aircraft component provider Crestview Aerospace; and engineering services and logistics company TCS for a combined \$540 million.

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**April 4 - The Carlyle Group (NASDAQ: CG) completed their purchase of StandardAero from Veritas Capital for more than \$5 billion.** StandardAero, headquartered in Scottsdale, Ariz., is a leading, global provider of maintenance, repair and overhaul services (MRO) to the commercial, business, military and general aviation industries, with more than 6,000 employees at 38 primary locations across five continents.

- The deal comes almost four years after Veritas acquired StandardAero from Dubai Aerospace Enterprise Ltd (DAE) for \$2.1 billion. This will be the second round of ownership under Carlyle, as they initially acquired StandardAero in 2004. In 2007, DAE simultaneously purchased StandardAero and Landmark Aviation from Carlyle in a transaction valued at \$1.8 billion.

\*Source – June 2019 - NPR's Bill Chappell "Raytheon, United Technologies Merger..."

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# SELECTED M&A TRANSACTIONS

Selected Transactions Review											
(\$ in millions)											
Transaction					Metrics				Valuation Benchmarks		
Date		Target	Acquirer	Enterprise Value	Target Trailing Twelve Months (TTM)			Implied Enterprise Value (EV) /			
Closed	Anncd.				Revenue	EBITDA %	EBIT %	Revenue	EBITDA	EBIT	
2019 2nd Quarter M&A Transactions											
29-Jun-19	14-Oct-18	L3 Technologies, Inc.	Harris Corporation (nka:L3Harris Technologies)	\$ 22,796.6	\$ 9,821.0	14.3%	11.2%	2.16x	16.26x	19.7x	
26-Jun-19	2-Apr-19	Latécoère S.A.	Searchlight Capital Partners	469.2	728.6	6.7%	-1.1%	0.62x	9.68x	14.7x	
24-Jun-19	24-Jun-19	Chemring Defence UK Ltd	PWD Group Limited	na	15.0	na	na	na	na	na	
10-Jun-19	11-Jun-19	Pulse Aerospace, Inc.	AeroVironment, Inc.	25.7	na	na	na	na	na	na	
7-Jun-19	10-Jun-19	Systron Donner Inertial, Inc.	EMCORE Corporation	25.8	28.0	na	na	0.92x	na	na	
6-Jun-19	10-Jun-19	Alta Precision Inc	Héroux-Devtek Inc.	17.2	na	na	na	na	na	na	
3-Jun-19	8-Nov-18	All Assets, Intellectual Property and Type Certificates of Dash 8 Series and Q400 Program	Longview Aircraft Company of Canada Limited	300.0	na	na	na	na	na	na	
29-May-19	13-Dec-18	Aerospace Industrial Maintenance Norway AS	Kongsberg Defence & Aerospace AS; Patria Oyj	17.2	13.2	na	na	1.30x	na	na	
23-May-19	12-Dec-18	Swift Air, LLC	iAero Group	na	na	na	na	na	na	na	
30-Apr-19	30-Apr-19	Southern Airways Corporation	SkyWest, Inc.	na	na	na	na	na	na	na	
18-Apr-19	18-Apr-19	Shoreline Aviation, Inc.	Hyannis Air Service, Inc.	na	na	na	na	na	na	na	
4-Apr-19	18-Dec-18	StandardAero, Inc.	The Carlyle Group L.P.; Carlyle Partners VII, L.P.	5,010.0	3,000.0	na	na	1.67x	na	na	
2-Apr-19	7-Jan-19	General Aerospace GmbH	Stabilus S.A.	40.0	12.6	na	na	3.17x	na	na	
1-Apr-19	7-Mar-19	Dart Holding Company Ltd.	First Aviation Services Inc.; Greenbriar Equity Group LLC	75.0	45.6	na	na	1.64x	na	10.3x	
na	26-Jun-19	Kaman Industrial Technologies Corporation	Littlejohn & Co. LLC	700.0	1,100.0	6.0%	na	0.64x	10.55x	13.4x	
na	25-Jun-19	Canadair Regional Jet Program of Bombardier Inc.	Mitsubishi Heavy Industries, Ltd.	750.0	na	na	na	na	na	na	
na	24-Jun-19	Advanced Electronics Company Limited	Saudi Arabian Military Industries (SAMI)	na	552.0	na	na	na	na	na	
na	17-Jun-19	AIM Aerospace, Inc.	Sekisui Chemical Co., Ltd.	510.0	178.5	na	na	2.86x	na	na	
na	9-Jun-19	Raytheon Company	United Technologies Corporation	91,035.9	27,520.0	14.3%	12.5%	3.31x	23.13x	26.5x	
na	10-Jun-19	EDAC Technologies Corporation	Hanwha Aerospace Co., Ltd.	295.3	150.0	na	na	1.97x	na	na	
na	21-May-19	CIRCOR International, Inc.	Crane Co.	na	1,170.6	na	4.6%	na	na	na	
na	1-Apr-19	Alestis Aerospace, S.L.	Aciturri Aeronáutica, S.L.U.	na	317.4	na	na	na	na	na	
				Mean	\$ 8,137.9	\$ 2,976.8	10.3%	6.8%	1.84x	14.91x	16.9x
				Median	\$ 300.0	\$ 317.4	10.5%	7.9%	1.67x	13.41x	14.7x

Sources of Information: S&P Capital IQ and Pitchbook



### Selected Transactions Review

(\$ in millions)

Close Date	Target	Investors	Raise	Round Type	Round Number
<b>2019 2nd Quarter Private Placements</b>					
12-Jul-19	Air Comm Corporation	The transaction included participation from 6 investors	\$ 32.0	Growth	1
13-Jun-19	Fortem Technologies, Inc.	Various investors	14.5	Venture	3
11-Jun-19	Sense Photonics, Inc.	Samsung Venture Investment Corporation; Shell Ventures; Acadia Woods Partners, LLC; Prelude Ventures, LLC; Hemi Ventures; Congruent Ventures; IPD Capital, LLC	26.0	Series A	2
3-Jun-19	Shandong Hairuo General Aviation Co., Ltd.	Shandong Dahe Investment Co., Ltd; Eastern Pioneer International Aviation Development Co., Ltd.	14.5	Growth	1
31-May-19	Heart Aerospace AB	EQT Ventures; Norrsken Foundation, Endowment ARm	2.1	Venture	2
20-May-19	Arris Composites, Inc.	New Enterprise Associates	10.0	Series A	1
10-May-19	KSU Aviation Private Limited	Çelebi Hava Servisi A.S.	4.6	Venture	1
9-May-19	Overhaul Group, Inc.	Abbey International Finance Limited	7.0	Venture	3
25-Apr-19	Tempo Automation Inc.	Lockheed Martin Corporation; Lux Capital Management; Uncork Capital; Golden Seeds LLC; Cendana Capital; Point72 Ventures	45.1	Series C	5
18-Apr-19	Capella Space Corp.	Various investors	13.7	Venture	4
15-Apr-19	Archiwave Microelectronics	China Aerospace Science and Industry Corporation; Delian Capital	3.0	Series A	1
14-Apr-19	Zeteo Tech LLC	Anzu Partners	3.5	Series A	3
9-Apr-19	Colive	Salarpuria Sattva Pvt Ltd	9.1	Series A	1
8-Apr-19	Aerospacelab SA	Société Régionale d'Investissement de Wallonie S.A.; Xange Private Equity, S.A.	12.4	Venture	1
na	Magnetic MRO AS	Shenzhen Yongtai Trading Co., Ltd.	10.1	Venture	1
na	MICT, Inc.	BNN Technology PLC	9.0	PIPE	6
na	Sacheon Aerospace Manufacturing Ind. Co., Ltd.	SW CO., LTD.	27.6	PIPE	1
na	Aerospace Rich Cable Co. Ltd	China Aerospace Times Electronics Co., Ltd.	11.0	Growth	1
Mean			\$ 14.2		
Median			\$ 10.5		

Sources of information: S&P Capital IQ and Pitchbook

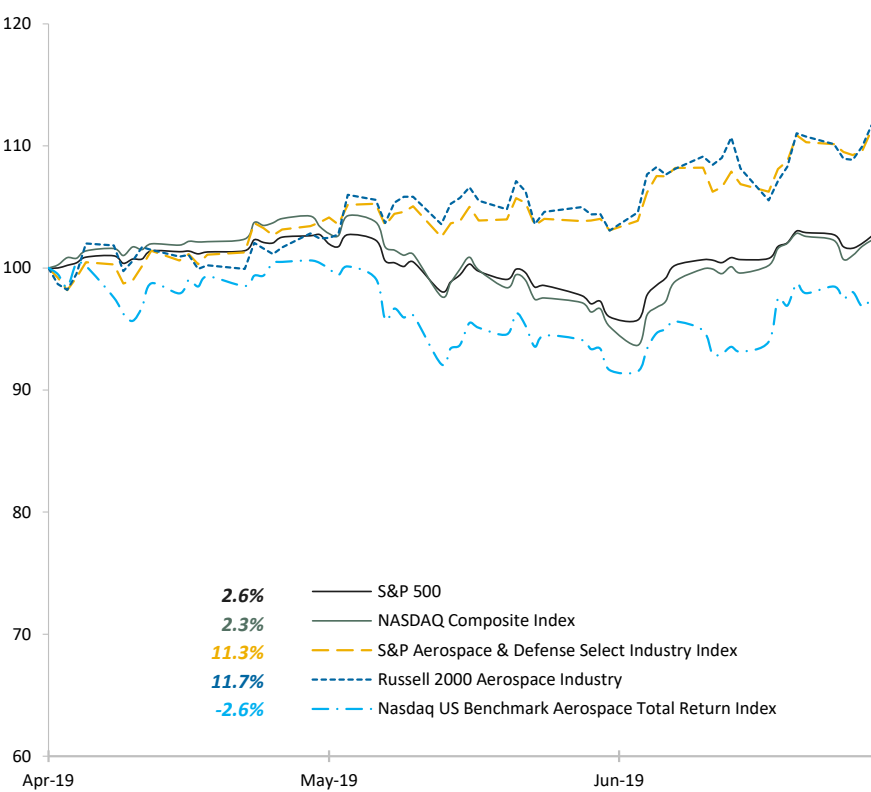
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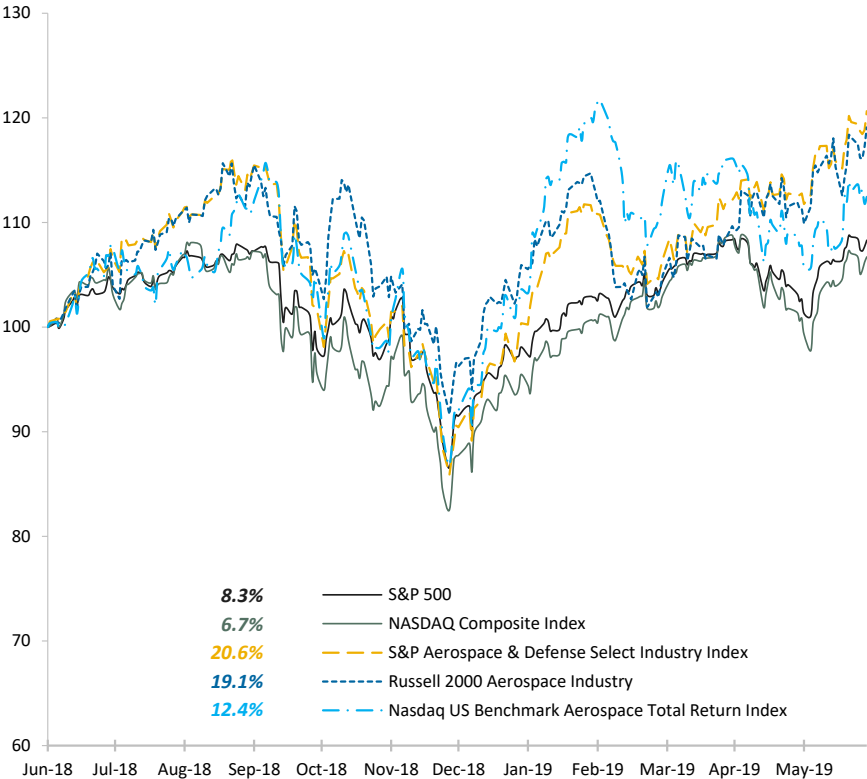
III **PUBLIC MARKETS OVERVIEW**

Relative Performance

Quarterly - April 1, 2019 to June 28, 2019



Annual - June 28, 2018 to June 28, 2019



Sources of information: S&P Capital IQ.

## Selected Companies Review

(\$ in thousands, except per security)

Company	Ticker	Market Statistics			Metrics				Valuation Benchmarks				
		Closing Price	% of 52-week	Enterprise	Revenue	EBITDA	EBITDA	EBITDA	EV / Revenue		EV / EBITDA		
		28-Jun-19	High-Low	Value	LTM	LTM	LTM Margin	2020 E Growth	LTM	2019 E	LTM	2019 E	
Aerostructures & Component Manufacturers													
Air Industries Group	AIRI	\$ 1.09	60.6% - 155.7%	\$ 60.9	\$ 48.3	\$ 0.1	0.2%	10.6%	1.26x	1.11x	569.1x	18.5x	
Allegheny Technologies Incorporated	ATI	\$ 25.20	83.5% - 120.9%	4,828.6	4,072.4	455.1	11.2%	27.1%	1.19x	1.14x	10.6x	9.4x	
Arconic Inc.	ARNC	\$ 25.82	100.0% - 165.2%	16,974.6	14,110.0	1,841.0	13.0%	5.8%	1.20x	1.18x	9.2x	7.8x	
Astronics Corporation	ATRO	\$ 40.22	90.7% - 145.9%	1,439.2	832.4	108.9	13.1%	16.6%	1.73x	1.84x	13.2x	12.5x	
CPI Aerostructures, Inc.	CVU	\$ 8.41	79.0% - 144.3%	134.1	91.3	10.0	11.0%	7.9%	1.47x	1.32x	13.4x	9.6x	
Hexcel Corporation	HXL	\$ 80.88	99.6% - 151.2%	8,106.4	2,258.9	524.0	23.2%	7.4%	3.59x	3.33x	15.5x	14.0x	
Honeywell International Inc.	HON	\$ 174.59	98.4% - 141.4%	134,567.2	40,294.0	8,779.0	21.8%	6.4%	3.34x	3.62x	15.3x	15.2x	
Ducommun Incorporated	DCO	\$ 45.07	86.6% - 145.2%	767.4	651.4	70.8	10.9%	5.0%	1.18x	1.12x	10.8x	9.2x	
FACC AG	WBAG:FACC	\$ 13.84	55.3% - 101.0%	848.8	890.1	75.1	8.4%	19.0%	0.95x	0.91x	11.3x	8.6x	
Héroux-Devtek Inc.	TSX:HRX	\$ 14.65	97.7% - 173.4%	710.6	362.0	53.6	14.8%	8.0%	1.96x	1.64x	13.3x	10.5x	
Innovative Solutions and Support, Inc.	ISSC	\$ 5.10	97.1% - 252.5%	66.0	15.2	(0.8)	-5.2%	na	4.34x	na	na	na	
JAMCO Corporation	TSE:7408	\$ 19.54	62.7% - 103.8%	700.5	758.7	59.6	7.9%	na	0.92x	0.83x	11.8x	na	
Kaman Corporation	KAMN	\$ 63.69	89.7% - 124.1%	2,143.0	1,869.5	159.4	8.5%	7.8%	1.15x	1.10x	13.4x	12.6x	
Latécoère S.A.	ENXTPA:LAT	\$ 3.27	61.6% - 123.7%	368.1	758.1	48.8	6.4%	8.7%	0.49x	0.48x	7.5x	5.9x	
Lisi S.A.	ENXTPA:FII	\$ 32.37	78.2% - 151.3%	2,116.8	1,928.9	268.6	13.9%	9.2%	1.10x	1.09x	7.9x	7.4x	
Magellan Aerospace Corporation	TSX:MAL	\$ 12.46	84.7% - 123.5%	772.3	742.2	113.2	15.3%	-0.7%	1.04x	0.99x	6.8x	6.0x	
Meggitt PLC	MGGT	\$ 6.66	89.8% - 127.8%	6,501.1	2,651.8	499.0	18.8%	7.0%	2.45x	2.34x	13.0x	10.3x	
Moog Inc.	MOG.A	\$ 93.61	95.0% - 136.9%	4,006.6	2,791.4	350.8	12.6%	9.9%	1.44x	1.39x	11.4x	10.7x	
RBC Bearings Incorporated	ROLL	\$ 166.81	98.2% - 135.1%	4,111.6	702.5	178.3	25.4%	7.2%	5.85x	5.55x	23.1x	21.4x	
Senior plc	LSE:SNR	\$ 2.74	64.1% - 117.1%	1,334.4	1,379.2	158.8	11.5%	10.2%	0.97x	0.95x	8.4x	7.0x	
SIFCO Industries, Inc.	SIF	\$ 2.89	49.8% - 107.4%	41.0	115.6	1.5	1.3%	na	0.35x	na	27.4x	na	
Spirit AeroSystems Holdings, Inc.	SPR	\$ 81.37	81.1% - 126.2%	9,488.5	7,453.7	1,182.3	15.9%	8.4%	1.27x	1.19x	8.0x	7.6x	
Triumph Group, Inc.	TGI	\$ 22.90	88.1% - 205.2%	2,538.8	3,364.9	200.8	6.0%	22.9%	0.75x	0.85x	12.6x	9.4x	
TransDigm Group Incorporated	TDG	\$ 483.80	96.5% - 157.4%	40,634.5	4,219.3	2,001.9	47.4%	10.3%	9.63x	6.78x	20.3x	16.4x	
Woodward, Inc.	WWD	\$ 113.16	97.2% - 165.4%	8,387.5	2,719.1	495.3	18.2%	13.6%	3.08x	2.88x	16.9x	15.3x	
		Mean	83.4% - 144.1%	\$ 10,065.9	\$ 3,803.2	\$ 705.4	13.3%	10.4%	2.11x	1.90x	36.3x	11.1x	
		Median	88.1% - 141.4%	\$ 2,116.8	\$ 1,379.2	\$ 159.4	12.6%	8.6%	1.26x	1.18x	12.8x	10.0x	

Market value equals price per share times number of diluted shares outstanding. Enterprise value equals market value plus debt, preferred stock, and non controlling interests, less cash.

Sources of information: S&P Capital IQ.

## Selected Companies Review

(\$ in thousands, except per security)

Company	Ticker	Market Statistics			Metrics				Valuation Benchmarks				
		Closing Price	% of 52-week	Enterprise	Revenue	EBITDA	EBITDA	EBITDA	EV / Revenue		EV / EBITDA		
		28-Jun-19	High-Low	Value	LTM	LTM	LTM Margin	2020 E Growth	LTM	2019 E	LTM	2019 E	
MRO, Parts & Supply Chain													
AAR Corp.	AIR	\$ 36.72	71.3% - 123.1%	\$ 1,424.7	\$ 1,962.6	\$ 143.9	7.3%	na	0.73x	0.69x	9.9x	8.5x	
HEICO Corporation	HEI	\$ 133.81	100.0% - 187.2%	16,616.3	1,924.5	507.1	26.3%	6.8%	8.63x	8.10x	32.8x	30.4x	
Wesco Aircraft Holdings, Inc.	WAIR	\$ 11.10	78.0% - 150.4%	1,931.6	1,639.0	144.5	8.8%	17.7%	1.18x	1.13x	13.4x	10.2x	
MTU Aero Engines AG	XTRA:MTX	\$ 238.39	99.1% - 134.6%	12,445.4	5,254.9	831.2	15.8%	9.6%	2.37x	2.27x	15.0x	12.1x	
Singapore Technologies (ST Aerospace)	SGX:S63	\$ 3.06	98.6% - 129.0%	9,903.9	5,007.0	608.8	12.2%	14.4%	1.98x	1.75x	16.3x	14.3x	
TAT Technologies Ltd.	TATT	\$ 5.71	70.0% - 101.1%	43.6	92.1	(0.6)	-0.6%	na	0.47x	na	na	na	
VSE Corporation	VSEC	\$ 28.59	56.4% - 118.8%	618.3	690.2	79.7	11.6%	na	0.90x	na	7.8x	na	
		Mean	81.9% - 134.9%	\$ 6,140.5	\$ 2,367.2	\$ 330.6	11.6%	12.1%	2.32x	2.79x	15.8x	15.1x	
		Median	78.0% - 129.0%	\$ 1,931.6	\$ 1,924.5	\$ 144.5	11.6%	12.0%	1.18x	1.75x	14.2x	12.1x	
Aviation Services													
AerCap Holdings N.V.	AER	\$ 52.01	89.2% - 143.8%	\$ 35,809.3	\$ 4,785.9	\$ 2,434.0	50.9%	1.0%	7.48x	7.32x	14.7x	8.6x	
Aircastle Limited	AYR	\$ 21.26	95.5% - 135.0%	6,416.0	856.5	na	na	6.5%	7.49x	7.40x	na	8.1x	
Air Lease Corporation	AL	\$ 41.34	87.3% - 147.0%	16,231.8	1,764.5	na	na	25.2%	9.20x	7.87x	na	8.5x	
Air T, Inc.	AIRT	\$ 17.49	59.2% - 117.0%	101.1	249.8	15.8	6.3%	na	0.40x	na	6.4x	na	
Air Transport Services Group, Inc.	ATSG	\$ 24.40	94.5% - 143.0%	2,844.9	1,037.5	348.7	33.6%	10.2%	2.74x	2.04x	8.2x	6.3x	
Arotech Corporation	ARTX	\$ 1.99	49.8% - 105.3%	72.2	90.1	4.5	5.0%	36.1%	0.80x	0.74x	16.0x	10.5x	
Atlas Air Worldwide Holdings, Inc.	AAWW	\$ 44.64	61.0% - 127.4%	4,015.5	2,767.4	572.7	20.7%	5.9%	1.45x	1.33x	7.0x	6.6x	
BBA Aviation plc	LSE:BBA	\$ 3.59	79.7% - 136.3%	5,025.6	2,347.3	417.4	17.8%	-6.9%	2.14x	1.84x	12.0x	7.7x	
CAE Inc.	TSX:CAE	\$ 26.92	95.5% - 159.3%	8,695.5	2,472.1	445.8	18.0%	8.7%	3.52x	3.11x	19.5x	13.6x	
Gogo Inc.	GOGO	\$ 3.98	50.9% - 150.8%	1,303.3	861.5	115.1	13.4%	41.9%	1.51x	1.58x	11.3x	12.7x	
		Mean	76.3% - 136.5%	\$ 8,051.5	\$ 1,723.3	\$ 544.3	20.7%	14.3%	3.67x	3.69x	11.9x	9.2x	
		Median	83.5% - 139.7%	\$ 4,520.5	\$ 1,401.0	\$ 383.1	17.9%	8.7%	2.44x	2.04x	11.7x	8.5x	

Market value equals price per share times number of diluted shares outstanding. Enterprise value equals market value plus debt, preferred stock, and non controlling interests, less cash.

Sources of information: S&P Capital IQ.

# SELECTED PUBLIC COMPANY TRADING DATA

## Selected Companies Review

(\$ in thousands, except per security)

Company	Ticker	Market Statistics			Metrics				Valuation Benchmarks				
		Closing Price	% of 52-week	Enterprise	Revenue	EBITDA	EBITDA	EBITDA	EV / Revenue		EV / EBITDA		
		28-Jun-19	High-Low	Value	LTM	LTM	LTM Margin	2020 E Growth	LTM	2019 E	LTM	2019 E	
Airframe & Engine OEM													
Airbus SE	ENXTPA:AIR	\$ 141.88	98.6% - 160.9%	\$ 112,294.6	\$ 74,227.8	\$ 6,587.0	8.9%	16.0%	1.51x	1.40x	17.0x	10.6x	
The Boeing Company	BA	\$ 364.01	81.6% - 124.5%	213,937.2	100,662.0	13,450.0	13.4%	31.9%	2.13x	2.11x	15.9x	15.1x	
Bombardier Inc.	TSX:BBD.B	\$ 1.68	39.4% - 138.8%	12,885.8	15,724.0	1,032.0	6.6%	34.3%	0.82x	0.76x	12.5x	8.5x	
Dassault Aviation SA	ENXTPA:AM	\$ 1,438.32	73.1% - 114.6%	6,032.8	5,861.3	612.5	10.5%	-11.2%	1.03x	0.78x	9.8x	7.5x	
Embraer S.A.	BOVESPA:EMBR3	\$ 5.07	69.3% - 114.5%	2,546.1	4,842.8	241.7	5.0%	151.4%	0.53x	0.48x	10.5x	10.2x	
General Electric Company	GE	\$ 10.50	73.5% - 157.7%	207,656.5	121,113.0	15,617.0	12.9%	22.8%	1.71x	1.77x	13.3x	17.0x	
Rolls-Royce Holdings plc	LSE:RR.	\$ 10.68	76.1% - 112.5%	20,099.9	20,046.9	(232.0)	-1.2%	18.9%	1.00x	1.03x	na	9.2x	
Safran SA	ENXTPA:SAF	\$ 146.62	96.2% - 128.9%	67,976.8	24,245.5	3,788.6	15.6%	12.8%	2.80x	2.57x	17.9x	13.8x	
Textron Inc.	TXT	\$ 53.04	72.8% - 122.6%	15,889.7	13,785.0	1,577.0	11.4%	7.3%	1.15x	1.14x	10.1x	9.7x	
United Technologies Corporation	UTX	\$ 130.20	90.2% - 129.6%	157,044.9	69,624.0	11,875.0	17.1%	7.0%	2.26x	2.03x	13.2x	11.5x	
		Mean	77.1% - 130.4%	\$ 81,636.4	\$ 45,013.2	\$ 5,454.9	10.0%	29.1%	1.49x	1.41x	13.4x	11.3x	
		Median	74.8% - 126.7%	\$ 44,038.4	\$ 22,146.2	\$ 2,682.8	10.9%	17.5%	1.33x	1.27x	13.2x	10.4x	
Defense Contractors													
AeroVironment, Inc.	AVAV	\$ 56.77	46.8% - 104.0%	\$ 1,033.5	\$ 314.3	\$ 45.9	14.6%	26.9%	3.29x	2.97x	22.5x	20.8x	
BAE Systems plc	LSE:BA.	\$ 6.30	72.8% - 112.7%	21,519.3	21,438.7	2,299.2	10.7%	6.2%	1.00x	0.86x	9.4x	7.3x	
Elbit Systems Ltd.	TASE:ESLT	\$ 148.70	92.3% - 130.8%	7,533.5	3,886.9	440.9	11.3%	9.0%	1.94x	1.63x	17.1x	14.5x	
General Dynamics Corporation	GD	\$ 180.81	87.0% - 125.7%	67,101.3	37,919.0	5,380.0	14.2%	7.1%	1.77x	1.73x	12.5x	12.4x	
Herkules S.A.	HRS	\$ 0.57	59.6% - 111.0%	43.4	35.1	8.4	23.8%	na	1.24x	na	5.2x	na	
Huntington Ingalls Industries, Inc.	HII	\$ 224.74	85.7% - 129.3%	10,967.5	8,382.0	1,164.8	13.9%	9.7%	1.31x	1.27x	9.4x	10.7x	
Kratos Defense & Security Solutions, Inc.	KTOS	\$ 22.89	99.6% - 203.3%	2,613.6	635.4	54.9	8.6%	26.9%	4.11x	3.53x	47.6x	34.4x	
L3Harris Technologies, Inc.	LHX	\$ 189.13	94.2% - 153.5%	25,924.1	6,611.0	1,569.0	23.7%	na	3.92x	na	16.5x	na	
Leonardo S.p.a.	BIT:LDO	\$ 12.68	98.2% - 149.6%	12,085.4	14,044.9	1,621.8	11.5%	8.0%	0.86x	0.83x	7.5x	6.5x	
Lockheed Martin Corporation	LMT	\$ 363.54	99.9% - 150.7%	116,212.0	56,463.0	8,879.0	15.7%	20.1%	2.06x	2.00x	13.1x	12.3x	
Mercury Systems, Inc.	MRCY	\$ 70.35	88.1% - 187.4%	4,061.0	630.6	125.7	19.9%	17.2%	6.44x	5.92x	32.3x	26.9x	
Northrop Grumman Corporation	NOC	\$ 323.11	99.3% - 144.5%	70,593.0	31,549.0	5,149.0	16.3%	10.0%	2.24x	2.08x	13.7x	15.0x	
Raytheon Company	RTN	\$ 172.94	82.0% - 119.9%	52,479.7	27,520.0	3,936.0	14.3%	7.4%	1.91x	1.82x	13.3x	9.8x	
Thales S.A.	ENXTPA:HO	\$ 123.63	87.3% - 115.2%	22,947.9	18,152.9	2,153.2	11.9%	12.2%	1.26x	1.08x	10.7x	8.3x	
		Mean	85.2% - 138.4%	\$ 29,651.1	\$ 16,255.9	\$ 2,344.8	15.0%	13.4%	2.38x	2.14x	16.5x	14.9x	
		Median	87.7% - 130.0%	\$ 16,802.3	\$ 11,213.4	\$ 1,595.4	14.2%	9.8%	1.92x	1.77x	13.2x	12.4x	

Market value equals price per share times number of diluted shares outstanding. Enterprise value equals market value plus debt, preferred stock, and non controlling interests, less cash.

Sources of information: S&P Capital IQ.

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