

Aviation Investment Banking Q1 2018 Update



James S. Cassel Chairman jcassel@cs-ib.com 305-438-7701

Representative Assignments:

Sale: Gulfstream International Airlines

Sale: Tradewinds Power Corp



Scott E. Salpeter
President
ssalpeter@cs-ib.com
305-438-7702

Representative Assignments:

Valuation: Flightstar Aircraft Services

Valuation: Global Engine
 Maintenance

Solvency: Amerijet International

Valuation: Avborne Heavy Maintenance



Joseph "Joey" Smith Director Aviation Services jsmith@cs-ib.com 305-438-7706

Representative Assignments:

Capital Raise: Avenger Flight Group

Capital Raise: Diversified Aero

Services

Capital Raise: Alaris Aerospace

**Systems** 



Ira Leiderman Managing Director



Ranjini Chandirakanthan Managing Director



Phillip Cassel Director



Marcus Wai Vice President



Chris Mansueto
Vice President



Laura Salpeter Vice President



Julian Astrove Analyst

Includes projects by our professionals at prior firms.

I	AEROSPACE & DEFENSE REVIEW
II	M&A & PRIVATE PLACEMENT TRANSACTIONS
Ш	PUBLIC MARKETS OVERVIEW

### A Rear View Look at 2017

- 2017 was a record year with global aerospace and defense deal value exceeding \$70 billion.
- Competition throughout the aviation ecosystem has put pressure on profit margins, resulting in great demand for strategic growth opportunities, industry consolidation, supply chain synergies, and partnering opportunities.
- The volume of activity and the premium valuations confirm that the seller's market continues. These features combined with the historical low cost of capital have produced some of the largest acquisitions in industry history.
- There were 454 total deals transacted (flat), with the average deal size at \$411 million, ~19% higher than the preceding year.
- A few "megadeal" transactions accounted for the majority of the total deal value, highlighted by United Technologies' \$30 billion acquisition of Rockwell Collins representing an EV/Revenue multiple of 5.0x and an EV/EBITDA multiple of ~22x. Other notable transactions included:
  - Northrop Grumman's \$9.4 billion acquisition of Orbital ATK
  - Safran's \$8 billion acquisition of Zodiac Aerospace
  - Thales' \$5 billion acquisition of Gemalto
- The year ended with a sonic boom, as Airbus SE agreed to acquire a majority stake in Bombardier's (Canada) C Series program, which prompted Boeing to accelerate conversations with Embraer SA (Brazil) for their E-Jet Family. These pairings, with their smaller regional rivals, provides a generational opportunity to add to their \$100 billion global commercial plane duopoly, while positioning themselves for the upcoming strategic threat from China and India.

### 2018 and the Runway Ahead

- Tax reform will provide increased liquidity which, combined with continued strong growth in aviation, and a return to growth in defense, should result in another strong year of M&A in 2018.
- The commercial aviation sector remains strong in terms of new-jet orders and growing airline utilization of equipment, which should lead to more used-parts sales, affording numerous opportunities to consolidate.
- As OEM production increases for the aircraft delivery, managing the parts supply chain becomes a more vital component for suppliers focused on the efficient real-time delivery of products, while maintaining incremental margin growth for on-time aircraft delivery.
- The defense and government sector seems primed for continued growth and opportunities. The growing geopolitical tension, and the call for increased defense budgets, has created tremendous euphoria within the core military contractor sector, including: missile defense, space, AI, robotics, and cybersecurity.
- Aircraft and Parts, including the MRO category, maintains the largest share of the middle-market deal value, as OEM and aftermarket part suppliers seek to protect profit margins, and core capabilities, from increasing competition and consolidation.
- 2018 is off to a quick start with its first "megadeal", i.e. General Dynamics' \$9.7 billion acquisition of CSRA Inc. representing an EV/Revenue multiple of ~2.0x and an EV/EBITDA multiple of ~12x. CSRA is now part of General Dynamics' massive Information Technology solutions group.

I AEROSPACE & DEFENSE REVIEW

II M&A & PRIVATE PLACEMENT TRANSACTIONS

III PUBLIC MARKETS OVERVIEW

			Selected Transac	tions	Review							
(\$ in millions	:)											
		Transact	Me	trics		Valuation Be	enchmarks					
	Date			Enterprise			Targe	t TTM	Implied	d EV /	Stock Price	Premiums
Annc.	Closed	Target	Acquirer	Value		R	Revenue	EBITDA %	Revenue	EBITDA	1-Day	1-Month
2018 1st Q	uarter M&A T	ransactions										
19-Jan-17	2-Mar-18	Zodiac Aerospace	Safran SA	\$	9,579.2	\$	5,773.4	4.7%	1.52x	24.69x	7.3%	11.4%
27-Oct-17	22-Jan-18	Asian Compressor Technology Serv.	MB Aerospace Newton Abbot Limited		60.0		na	na	na	na	na	na
21-Dec-17	1-Feb-18	Themis Computer, Inc.	Mercury Systems, Inc.		180.0		na	na	na	na	na	na
3-Jan-18	na	Magnetic MRO AS	Guangzhou Hangxin Aviation Tech. Co.		52.7		na	na	na	na	na	na
12-Jan-18	na	GKN plc	Melrose Industries PLC		12,336.9		13,430.1	9.8%	0.91x	9.29x	38.5%	54.4%
31-Jan-18	2-Apr-18	ECS Federal, Inc.	ASGN Incorporated		775.0		13,071.6	9.8%	na	na	na	na
1-Feb-18	1-Feb-18	FMH Aerospace Corp.	AMETEK, Inc.		235.0		50.0	na	4.70x	na	na	na
8-Feb-18	na	Aitech Defense Systems, Inc.	First Israel Mezzanine Investors Ltd.		30.0		na	na	na	na	na	na
12-Feb-18	2-Apr-18	CSRA Inc.	General Dynamics Corporation		9,871.1		5,064.0	16.6%	1.95x	11.73x	33.8%	28.6%
23-Feb-18	na	SGT, Inc.	KBRwyle Technology Solutions, LLC		355.0		5,064.0	16.6%	na	na	na	na
27-Feb-18	na	Beaver Aerospace & Defense, Inc.	Héroux-Devtek Inc.		23.5		30.0	na	0.78x	na	na	na
11-Mar-18	na	IMI Systems Ltd.	Elbit Systems Ltd.		536.2		na	na	na	na	na	na
19-Mar-18	na	Extant Components Group	TransDigm Group Incorporated		525.0		na	na	na	na	na	na
22-Mar-18	11-Apr-18	Universal Avionics Systems Corp	Elbit Systems Ltd.		120.0		na	na	na	na	na	na
29-Mar-18	na	Strategic Engineering Div. Tata Power	Tata Advanced Systems Limited		335.2		81.8	na	4.19x	na	na	na
			Mean	\$	2,334.3	\$	5,320.6	11.5%	2.34x	15.24x	26.5%	31.5%
			Median	\$	335.2	\$	5,064.0	9.8%	1.73x	11.73x	33.8%	28.6%

# PRIVATE PLACEMENT REVIEW

#### **Selected Transactions Review**

(\$ in millions)

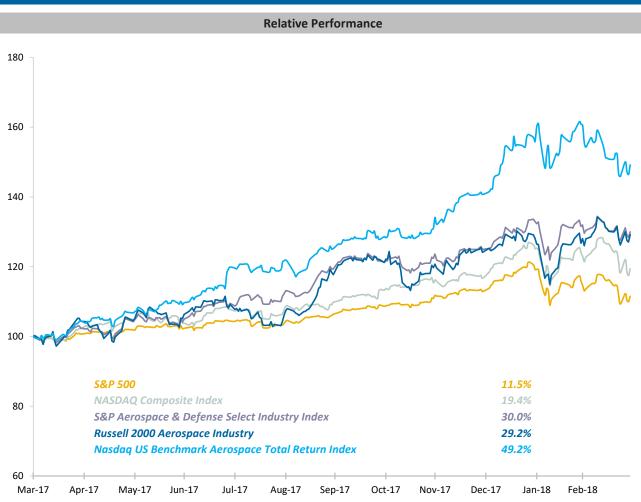
2018 13 Quarter Private Placements  9 Jan 38 Autonomous Control Systems Laboratory Ltd. Cidobe Partners, Mincho Capital Co. Ltd.; SPARX Group Co., Ltd; The University of Tolyo Edge Capital Co., Ltd.; Globe Partners Platinum Fund; Minci Creation Pand, Miculo Section Sheen Fund 2: DromeFund Systems Laboratory Ltd. Cidobe Partners, Statishart Ventures Graphit, CLV Sentures Clos., Ltd.; Sentures Graphit Mines Partners, Statishart Ventures Graphit, CLV Sentures Clos., Ltd.; Sentures Graphit Sentures Fund Management Co., Ltd.; Tongkong Investment Group; China Sharinani Sentures Sentures Clos., Ltd.; Sentures Quarhal Hongital Equity Investment Fund Management Co., Ltd.; Tongkong Investment Group; China Sharinani Sentures Sentures Clos., Ltd.; Sentures Quarhal Hongital Equity Investment Fund Management Co., Ltd.; Tongkong Investment Group; CLI. Sentures S	۵.	Target	D,	aise	Round Type	Round Number	
Suppose Suppos	. 0		ilivestuis	No	1130	туре	IVUITIDE
Shenzhen Zhenzusun investment Co., Ltd.; Shenzhen Qianhai Wutong Buyout Investment Fund Management Co., Ltd.; Tongkong Investment Group; China Merchants Capital Novestment Co., Ltd.; Shenzhen Qianhai Hongtai Equity Investment Fund Management Co., Ltd.; Tongkong Investment Group; China Merchants Capital SAS  2.4  2.4  2.5  2.5  2.5  2.6  2.7  2.7  2.7  2.7  2.7  2.7  2.7				\$	18.7	Venture	2
Belging Chespace Technology Co., Ltd. Merchants Capital Investment Co., Ltd.; Shenzhen Qianhal Hongtal Equity Investment Fund Management Co., Ltd. 31.0  2-Jan-18 Elistair SAS Starquest Capital SAS 2.4  8-Jan-18 Iris Automation Inc. ASGN Incorporated 8.0  2-Jan-18 Airobotics Ltd. CRV; Blueflun Ventures; Microsoft Ventures; Our Crowd Ltd. 4.2.5  4-Jan-18 China North Communication Technology Co., Ltd Incorporated 9.2.5  4-Jan-18 China North Communication Technology Co., Ltd Incorporated 9.2.5  4-Jan-18 China North Communication Technology Co., Ltd Incorporated 9.2.5  4-Jan-18 China North Communication Technology Co., Ltd Incorporated 9.2.5  4-Jan-18 China North Communication Technology Co., Ltd Incorporated 9.2.5  4-Jan-18 China North Communication Technology Co., Ltd Incorporate Company Inc. Investment Arm; Capricorn Investment Group LLC; AME Cloud Ventures; Eight Partners; Let's like Capitals; Allen & Company Inc., Investment Arm; Capricorn Investment Group LLC; AME Cloud Ventures; Eight Partners; Let's like Capitals; Allen & Company Inc., Investment Arm; Capricorn Investment Group LLC; AME Cloud Ventures; Eight Partners; Let's like Capitals; Allen & Company Inc., Investment Arm; Capricorn Investment Group LLC; AME Cloud Ventures; Eight Partners; Let's like Lag's Like Scalar Missiles Company Inc., Investment Arm; Capricorn Investment Group LLC; AME Cloud Ventures; Eight Partners; Let's like Lag's Like Scalar Missiles Company Inc., Investment Office of Technology Lag's Like Scalar Missiles Company Inc., Investment Partners; Let's Musiles Capitals, Ltd. Indicator Fund; Fifty Years; Refactor Capital, Ltd.  13.5  3.44a-18 Space Technologies Corp.  13.5  3.44a-18 Space Technologies Corp.  13.5  3.44a-18 Space Technologies Corp.  13.5  3.44a-18 Fortem Technologies, Inc.  13.6  3.44a-18 Space Technologies, Inc.  13.6  3.44a-18 Space Technologies, Inc.  13.7  3.44a-18 Space Technologies, Inc.  13.7  3.44a-18 Space Technologies, Inc.  14.7  15. Investment Company  15.0  16.7  17.5  17.5  17.5  17.5  17.5  17.6  17.6  17.	3 5	SkySpecs, LLC	Venture Investors, LLC; Capital Midwest Fund; Huron River Venture Partners; Statkraft Ventures GmbH; UL Ventures		8.8	Series B	7
8-Jan-18 Irris Automation Inc. ASGN Incorporated 8.0 2-Jan-18 Airobotics Ltd. CRV; BlueRun Ventures; Microsoft Ventures; OurCrowd Ltd. 42.5 4-Jan-18 China North Communication Technology Co., Ltd Investment Company Inc. Investment Arms: Capricorn Investment Arms: Capricorn Investment Fortup LtC; AME Cloud Ventures; Eight Partners; JetBlue 12.9 1-Feb-18 Joby Aviation, LtC Ebl Investments Per Ltd.; Intel Capital; Allen & Company Inc., Investment Arms: Capricorn Investment Group LtC; AME Cloud Ventures; Eight Partners; JetBlue 1000 1-Feb-18 Commant Technology Development Co Ltd Lightspeed Venture Partners 13.5 1-Feb-18 Temp-Avia Anap Pao Tackcal Missiles Corporation JSC 3.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 13.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 13.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 13.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 13.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 14.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 14.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 14.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 14.5 1-Feb-18 Citadel Defense Company Inc. 1-Feb-18 Lightspeed Venture Partners 14.5 1-Feb-18 Lightspeed Venture 14.5 1-F	18 E	Beijing OneSpace Technology Co., Ltd.			31.0	Series A	1
2-Jan-18 Airobotics Ltd. CRV; BlueBun Ventures; Microsoft Ventures; OurCrowd Ltd. 42.5 4-Jan-18 China North Communication Technology Co.,Ltd Investment Company 1-Feb-18 Joby Aviation, LLC EDB Investments Pet. Ltd.; Intel Capital; Allen & Company Inc., Investment Arm; Capricorn Investment Group LtC; AME Gloud Ventures; Eight Partners; JetBlue 100.0 1-Feb-18 Commsat Technology Development Co Ltd Lightspeed Venture Partners 1-Feb-18 Citadel Defense Company Inc. Lightspeed Venture Partners 1-Feb-18 Citadel Defense Company Inc. Lightspeed Venture Partners 1-Feb-18 Citadel Defense Company Inc. Lightspeed Venture Partners 1-Feb-18 Astranis Space Technologies Corp. Y Combinator Management Ltd.; Andreessen Horowitz LtC; Indicator Fund; Fifty Years; Refactor Capital, LtC 1-Feb-18 Space Technologies, Inc. Mitsui & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance 150.7 1-Feb-18 Fortem Technologies, Inc. Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund I, L.P.; Boeing HorizonX; Manifest Investment Partners, LLC; Mubadala Investment Company 1-Feb-18 Fortem Technologies, Inc. Millennium Technology Value Partners; New Ground Ventures, LP; Manifest Growth Fund I, L.P.; Boeing HorizonX; Manifest Investment Partners, LLC; Mubadala Investment Company 1-Feb-18 Fortem Technologies, Inc. Millennium Technology Value Partners; BMW I Ventures; Next Frontier Capital; Toyota Al Ventures, LLC; Mubadala Investment Company 1-Feb-18 Fortem Technologies, Inc. Millennium Technology Value Partners; BMW I Ventures; Next Frontier Capital; Toyota Al Ventures, LLC; Mubadala Investment Company 1-Feb-18 Fortem Technologies, Inc. Toyota Tsusho Corporation 20.8 1-Feb-18 Fortem Technologies, Inc. Ycombinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC 35.0 1-Feb-18 Fortem Technology Value Partners; Membranes Companies; Playground Global, LLC 35.0 1-Feb-18 Fortem Technology Value Partners; Membranes Companies; Playground Global, LLC 35.0 1	18 E	Elistair SAS	Starquest Capital SAS		2.4	Venture	1
A-Jan-18 China North Communication Technology Co., Ltd Investment Company Feb-18 Joby Aviation, LLC Ebonomany Feb-18 Joby Aviation, LLC Ebonomany Feb-18 Commsat Technology Development Co Ltd Lightspeed Venture Partners Feb-18 Citadel Defense Company Inc. Lightspeed Venture Partners Feb-18 Citadel Defense Company Inc. Lightspeed Venture Partners LLC; Andreessen Horowitz LLC; Indicator Fund; Fifty Years; Refactor Capital, LLC  Astranis Space Technologies Corp. Y Combinator Management LLC; Andreessen Horowitz LLC; Indicator Fund; Fifty Years; Refactor Capital, LLC  Astranis Space Technologies, Inc. Miltul & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance  150.  Ana-18 Fortem Technologies, Inc. Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund I, LP; Boeing HorizonX; Manifest Investment Partners, LLC; Mubadala Investment Company  150.  Ana-18 Blackmore Sensors and Analytics Inc. Millennium Technology Value Partners; RMW i Ventures; Next Frontier Capital; Toyota Al Ventures, LLC  180.  Ana-18 Soltworks Co., Ltd. T.S. Investment Corporation; IBK T.S. Exit PEF  7.5  Ana-18 CybAero AB  European High Growth Opportunities Securitization Fund; Blue Ocean Advisors inc. 6.3	18 I	Iris Automation Inc.	ASGN Incorporated		8.0	Series A	3
Investment Company Feb-18 Joby Aviation, LLC EDB Investment Pte. Ltd.; intel Capital; Allen & Company Inc., Investment Arm; Capricorn Investment Group LLC; AME Cloud Ventures; Eight Partners; JetBlue Technology Venture; Toyota Al Ventures, LLC Feb-18 Commsat Technology Development Co Ltd Lightspeed Venture Partners 160 1-Feb-18 Temp-Avia Anpp Pao Tactical Missiles Corporation JSC 3.5 7-Feb-18 Citadel Defense Company Inc. Lightspeed Venture Partners 12.0 -Mar-18 Astranis Space Technologies Corp. Y Combinator Management LLC; Andreessen Horowitz LLC; Indicator Fund; Fifty Years; Refactor Capital, LLC 3-Mar-18 Space Technologies, Inc. Mitsui & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance 150.7 -Mar-18 Fortem Technologies, Inc. Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund J, L-P.; Boeing HorizonX; Manifest Investment Partners, LLC; Mubadala Investment Company Investment Company 15.0 -Mar-18 Blackmore Sensors and Analytics Inc. Millennium Technology Value Partners; BMW i Ventures; Next Frontier Capital, Toyota Al Ventures, LLC 18.0 -Mar-18 Soltworks Co., Ltd. T.S. Investment Corporation; IBKT.S. Exit PEF 7.5 -Mar-18 Relativity Space, Inc. Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC 35.0 -Mar-18 CybAero AB  European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc. 63	18 /	Airobotics Ltd.	CRV; BlueRun Ventures; Microsoft Ventures; OurCrowd Ltd.		42.5	Series C	2
Technology Ventures; Toyota Al Ventures, LLC Technology Development Co Ltd Lightspeed Venture Partners 16.0 1-Feb-18 Temp-Avia Anpp Pao Tactical Missiles Corporation JSC 3.5 7-Feb-18 Citadel Defense Company Inc. Lightspeed Venture Partners 12.0 -Mar-18 Astranis Space Technologies Corp. Y Combinator Management LLC; Andreessen Horowitz LLC; Indicator Fund; Fifty Years; Refactor Capital, LLC 3-Mar-18 Spaceflight Industries, Inc. Mitsul & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance 150.7 5-Mar-18 Fortem Technologies, Inc. Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund I, L.P.; Boeing HorizonX; Manifest Investment Partners, LLC; Mubadala Investment Company  15.0 0-Mar-18 Blackmore Sensors and Analytics Inc. Millennium Technology Value Partners; BMW i Ventures; Next Frontier Capital; Toyota Al Ventures, LLC Toyota Tsusho Corporation 20.8 7-Mar-18 Soltworks Co., Ltd. T.S. Investment Corporation; IBK T.S. Exit PEF 7.5 7-Mar-18 Relativity Space, Inc. Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC 35.0 8-Mar-18 CybAero AB European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc.	18 (	China North Communication Technology Co.,Ltd			12.9	Venture	1
1-Feb-18 Temp-Avia Anpp Pao Tactical Missiles Corporation JSC 3.5 7-Feb-18 Citadel Defense Company Inc. Lightspeed Venture Partners 12.0 -Mar-18 Astranis Space Technologies Corp. Y Combinator Management LLC; Andreessen Horowitz LLC; Indicator Fund; Fifty Years; Refactor Capital, LLC 13.5 3-Mar-18 Spaceflight Industries, Inc. Mitsui & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance 150.7 5-Mar-18 Fortem Technologies, Inc. Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund I, LP.; Boeing HorizonX; Manifest Investment Partners, LLC.; Mubadala Investment Company 15.0 0-Mar-18 Blackmore Sensors and Analytics Inc. Millennium Technology Value Partners; BMW i Ventures; Next Frontier Capital; Toyota Al Ventures, LLC. 7-Mar-18 Soltworks Co., Ltd. Toyota Tsusho Corporation; IBK T.S. Exit PEF 7.5 7-Mar-18 Relativity Space, Inc. Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC 35.0 8-Mar-18 CybAero AB European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc. 6.3	8 J	Joby Aviation, LLC			100.0	Series B	2
Citadel Defense Company Inc.  Lightspeed Venture Partners  Lightspeed Venture Partners  12.0  Astranis Space Technologies Corp.  Y Combinator Management LLC; Andreessen Horowitz LLC; Indicator Fund; Fifty Years; Refactor Capital, LLC  3-Mar-18  Spaceflight Industries, Inc.  Mitsui & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance  150.7  5-Mar-18  Fortem Technologies, Inc.  Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund I, L.P.; Boeing HorizonX; Manifest Investment Partners, LLC.; Mubadala Investment Company  150.0  1	8 (	Commsat Technology Development Co Ltd	Lightspeed Venture Partners		16.0	Series A	1
Astranis Space Technologies Corp.  Y Combinator Management LLC; Andreessen Horowitz LLC; Indicator Fund; Fifty Years; Refactor Capital, LLC  13.5  3-Mar-18 Spaceflight Industries, Inc.  Mitsui & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance  150.7  5-Mar-18 Fortem Technologies, Inc.  Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund I, L.P.; Boeing HorizonX; Manifest Investment Partners, LLC; Mubadala Investment Company  Millennium Technology Value Partners; BMW i Ventures; Next Frontier Capital; Toyota Al Ventures, LLC  7-Mar-18 AeroEdge Co., Ltd  Toyota Tsusho Corporation  15.0  7-Mar-18 Soltworks Co., Ltd.  T.S. Investment Corporation; IBK T.S. Exit PEF  7.5  7-Mar-18 Relativity Space, Inc.  Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC  8-Mar-18 CybAero AB  European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc.  6.3	18 1	Temp-Avia Anpp Pao	Tactical Missiles Corporation JSC		3.5	Growth	1
3-Mar-18 Spaceflight Industries, Inc. Mitsui & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance 150.7  5-Mar-18 Fortem Technologies, Inc. Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund I, L.P.; Boeing HorizonX; Manifest Investment Partners, LLC.; Mubadala Investment Company Millennium Technology Value Partners; BMW i Ventures; Next Frontier Capital; Toyota AI Ventures, LLC  7-Mar-18 AeroEdge Co., Ltd Toyota Tsusho Corporation 20.8  7-Mar-18 Soltworks Co., Ltd. T.S. Investment Corporation; IBK T.S. Exit PEF 7.5  7-Mar-18 Relativity Space, Inc. Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC 35.0  8-Mar-18 CybAero AB European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc. 6.3	18 (	Citadel Defense Company Inc.	Lightspeed Venture Partners		12.0	Series A	3
5-Mar-18 Fortem Technologies, Inc.  Data Collective; Signia Venture Partners; New Ground Ventures, LP; Manifest Growth Fund I, L.P.; Boeing HorizonX; Manifest Investment Partners, LLC.; Mubadala Investment Company  15.0  16.0  17.Mar-18 Blackmore Sensors and Analytics Inc.  Millennium Technology Value Partners; BMW i Ventures; Next Frontier Capital; Toyota Al Ventures, LLC  Toyota Tsusho Corporation  20.8  7-Mar-18 Soltworks Co., Ltd.  T.S. Investment Corporation; IBK T.S. Exit PEF  7.5  7-Mar-18 Relativity Space, Inc.  Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC  8-Mar-18 CybAero AB  European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc.  6.3	.8 /	Astranis Space Technologies Corp.	Y Combinator Management LLC; Andreessen Horowitz LLC; Indicator Fund; Fifty Years; Refactor Capital, LLC		13.5	Series A	2
Fortem Technologies, Inc. Investment Company  15.0  16.0  17-Mar-18 Blackmore Sensors and Analytics Inc. Millennium Technology Value Partners; BMW i Ventures; Next Frontier Capital; Toyota Al Ventures, LLC  18.0  7-Mar-18 AeroEdge Co., Ltd Toyota Tsusho Corporation  20.8  7-Mar-18 Soltworks Co., Ltd. T.S. Investment Corporation; IBK T.S. Exit PEF  7.5  7-Mar-18 Relativity Space, Inc. Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC  8-Mar-18 CybAero AB European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc.  6.3	-18 5	Spaceflight Industries, Inc.	Mitsui & Co. Global Investment Ltd.; Telespazio Spa; Thales Alenia Space France SAS; The Space Alliance		150.7	Series C	2
7-Mar-18 AeroEdge Co., Ltd. T.S. Investment Corporation 20.8 7-Mar-18 Soltworks Co., Ltd. T.S. Investment Corporation; IBK T.S. Exit PEF 7.5 7-Mar-18 Relativity Space, Inc. Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC 35.0 8-Mar-18 CybAero AB European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc. 6.3	-18 F	Fortem Technologies, Inc.			15.0	Series A	2
7-Mar-18 Soltworks Co., Ltd. T.S. Investment Corporation; IBK T.S. Exit PEF 7.5  7-Mar-18 Relativity Space, Inc. Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC 35.0  8-Mar-18 CybAero AB European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc. 6.3	-18 E	Blackmore Sensors and Analytics Inc.	Millennium Technology Value Partners; BMW i Ventures; Next Frontier Capital; Toyota Al Ventures,LLC		18.0	Series B	2
7-Mar-18 Relativity Space, Inc. Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC 35.0  8-Mar-18 CybAero AB European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc. 6.3	-18 A	AeroEdge Co., Ltd	Toyota Tsusho Corporation		20.8	Venture	1
8-Mar-18 CybAero AB European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc. 6.3	18 5	Soltworks Co., Ltd.	T.S. Investment Corporation; IBK T.S. Exit PEF		7.5	PIPE	3
	-18 F	Relativity Space, Inc.	Y Combinator Management LLC; Social Capital; Mark Cuban Companies; Playground Global, LLC		35.0	Series B	3
9-Mar-18 World View Enterprises, Inc. Accel Partners; Canaan Partners; Norwest Venture Partners 26.5	-18 (	CybAero AB	European High Growth Opportunities Securitization Fund; Blue Ocean Advisors Inc.		6.3	PIPE	4
	-18 \	World View Enterprises, Inc.	Accel Partners; Canaan Partners; Norwest Venture Partners		26.5	Series C	4
Mean         \$ 27.5           Median         \$ 15.5							

II AEROSPACE & DEFENSE REVIEW

M&A & PRIVATE PLACEMENT TRANSACTIONS

PUBLIC MARKETS OVERVIEW





# **SELECTED PUBLIC COMPANY TRADING DATA**

(\$ in thousands, except per security)								ies Revi									
is in thousands, except per security)				Market Statistics	t Statistics					Me	trics		Valuation Benchmarks				
		Clo	sing Price	% of 52-week	En	Enterprise		Revenue		BITDA	EBITDA	EBITDA	EV / Re	venue	EV / EI	BITDA	
Company	Ticker	30-Mar-18		High-Low	Value		LTM		LTM		LTM Margin 2	2019 E Growth	LTM	2018 E	LTM	2018 E	
Aerostructures & Component Ma	anufacturers																
Air Industries Group	AIRI	\$	1.54	41.3% - 133.9%	\$	68.6	\$	67.2	\$	(6.0)	-8.9%	25.0%	1.02x	0.91x	na	10.7	
Allegheny Technologies Incorporated	ATI	\$	23.68	78.3% - 162.9%		4,478.6		3,525.1		355.5	10.1%	22.9%	1.27x	1.17x	12.6x	9.4	
Arconic Inc.	ARNC	\$	23.04	73.9% - 105.9%		15,886.9		12,960.0		1,781.0	13.7%	9.4%	1.23x	1.17x	8.9x	7.8	
Astronics Corporation	ATRO	\$	37.30	75.4% - 155.7%		1,325.5		624.5		73.7	11.8%	13.7%	2.12x	1.70x	18.0x	12.2	
CPI Aerostructures, Inc.	CVU	\$	9.75	97.0% - 175.7%		117.0		81.3		10.8	13.3%	21.5%	1.44x	1.25x	10.8x	9.6	
Hexcel Corporation	HXL	\$	64.59	92.9% - 131.3%		6,591.8		1,973.3		455.1	23.1%	11.8%	3.34x	3.07x	14.5x	12.8	
Honeywell International Inc.	HON	\$	144.51	87.5% - 118.1%	1	16,194.5		40,534.0		8,266.0	20.4%	5.0%	2.87x	2.75x	14.1x	12.5	
Ducommun Incorporated	DCO	\$	30.38	85.4% - 121.2%		559.3		558.2		47.0	8.4%	13.6%	1.00x	0.95x	11.9x	9.3	
Esterline Technologies Corporation	ESL	\$	73.15	71.2% - 108.9%		2,634.7		2,023.9		285.2	14.1%	4.2%	1.30x	1.28x	9.2x	8.3	
FACC AG	WBAG:FACC	\$	27.47	113.1% - 426.4%		1,491.4		905.8		114.4	12.6%	12.0%	1.65x	1.49x	13.0x	12.1	
GKN plc	LSE:GKN	\$	6.50	140.3% - 219.6%		12,456.5		13,071.6		1,178.6	9.0%	9.8%	0.95x	0.88x	10.6x	8.6	
Héroux-Devtek Inc.	TSX:HRX	\$	11.62	74.0% - 100.8%		469.1		314.5		41.6	13.2%	13.4%	1.49x	1.22x	11.3x	7.5	
Innovative Solutions and Support, Inc.	ISSC	\$	3.53	77.8% - 135.8%		34.9		16.5		(2.7)	-16.3%	na	2.11x	na	na	na	
JAMCO Corporation	TSE:7408	\$	21.11	0.7% - 1.0%		796.4		703.4		55.4	7.9%	7.5%	1.13x	1.07x	14.4x	12.3	
Kaman Corporation	KAMN	\$	62.12	97.2% - 136.5%		2,107.6		1,805.9		160.7	8.9%	12.5%	1.17x	1.11x	13.1x	12.1	
Latécoère S.A.	ENXTPA:LAT	\$	6.13	102.2% - 173.1%		624.1		755.2		31.3	4.1%	18.3%	0.83x	0.77x	19.9x	8.9	
Lisi S.A.	ENXTPA:FII	\$	40.29	84.7% - 129.8%		2,510.5		2,005.3		314.0	15.7%	9.3%	1.25x	1.18x	8.0x	7.4	
Magellan Aerospace Corporation	TSX:MAL	\$	15.15	69.2% - 86.9%		918.1		772.6		122.9	15.9%	5.5%	1.19x	1.18x	7.5x	6.8	
Meggitt PLC	MGGT	\$	6.06	114.4% - 144.1%		6,050.8		2,740.2		716.1	26.1%	11.7%	2.21x	2.21x	8.4x	9.6>	
Moog Inc.	MOG.A	\$	82.41	87.7% - 127.1%		3,538.8		2,535.4		323.5	12.8%	7.3%	1.40x	1.34x	10.9x	10.1	
RBC Bearings Incorporated	ROLL	\$	124.20	88.7% - 136.5%		3,108.4		655.3		160.2	24.5%	11.9%	4.74x	4.43x	19.4x	17.6	
Rockwell Collins, Inc.	COL	\$	134.85	96.6% - 140.3%		29,069.2		7,640.0		1,638.0	21.4%	6.4%	3.80x	3.31x	17.7x	13.9	
Senior plc	LSE:SNR	\$	4.22	135.9% - 208.9%		1,980.8		1,383.3		162.6	11.8%	12.0%	1.43x	1.37x	12.2x	10.4	
SIFCO Industries, Inc.	SIF	\$	5.52	63.1% - 110.4%		61.4		114.2		2.8	2.5%	na	0.54x	na	21.6x	na	
Spirit AeroSystems Holdings, Inc.	SPR	\$	83.70	79.6% - 161.4%		10,322.8		6,983.0		786.7	11.3%	5.4%	1.48x	1.43x	13.1x	8.9	
Triumph Group, Inc.	TGI	\$	25.20	72.4% - 128.2%		2,562.0		3,222.0		349.5	10.8%	41.5%	0.80x	0.82x	7.3x	8.9	
TransDigm Group Incorporated	TDG	\$	306.94	95.5% - 141.2%		26,924.2		3,538.2		1,663.2	47.0%	7.0%	7.61x	7.15x	16.2x	14.5	
Woodward, Inc.	WWD	\$	71.66	80.2% - 109.9%		5,095.7		2,125.9		345.9	16.3%	10.4%	2.40x	2.26x	14.7x	12.4	
		Ме	an	84.9% - 144.0%	\$	9,213.6	\$	4,058.4	\$	694.0	12.9%	12.7%	1.92x	1.83x	13.1x	10.6	
			dian	85.0% - 134.8%	, \$	2,536.2	, \$	1,889.6	, \$	223.9	12.7%	11.7%	1.41x	1.27x	12.8x	9.8x	

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.

# **SELECTED PUBLIC COMPANY TRADING DATA**

(\$ in thousands, except per security)																	
				Market Statistics						Me	trics			Valuation I	Benchmark:	ŝ	
		Clos	ing Price	% of 52-week	E	Enterprise		Revenue		EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / EBITDA		
Company	Ticker	30-Mar-18		High-Low		Value	LTM		LTM		LTM Margin 2	2019 E Growth	LTM	2018 E	LTM	2018 E	
MRO, Parts & Supply Chain																	
AAR Corp.	AIR	\$	44.11	96.7% - 135.4%	\$	1,687.4	\$	1,902.1	\$	143.3	7.5%	na	0.89x	0.85x	11.8x	9.9	
CPI Aerostructures, Inc.	CVU	\$	9.75	97.0% - 175.7%		117.0		81.3		10.8	13.3%	21.5%	1.44x	1.25x	10.8x	9.6	
HEICO Corporation	HEI	\$	86.81	95.0% - 161.2%		9,213.4		1,585.8		387.6	24.4%	8.8%	5.81x	5.24x	23.8x	20.7	
Hong Kong Aircraft (HAECO)	SEHK:44	\$	5.81	10.4% - 12.7%		1,511.2		1,861.7		156.9	8.4%	na	0.81x	na	9.6x	na	
KLX Inc.	KLXI	\$	71.06	97.1% - 164.1%		4,534.9		1,740.8		282.4	16.2%	11.5%	2.61x	2.26x	16.1x	11.6	
Wesco Aircraft Holdings, Inc.	WAIR	\$	10.25	81.8% - 169.4%		1,863.2		1,453.1		129.5	8.9%	15.1%	1.28x	1.25x	14.4x	11.4	
MTU Aero Engines AG	XTRA:MTX	\$	168.54	107.5% - 146.9%		9,955.7		6,047.4		827.1	13.7%	6.8%	1.65x	1.67x	12.0x	10.6	
Singapore Technologies (ST Aerospace)	SGX:S63	\$	2.74	71.0% - 86.7%		8,854.1		4,953.0		567.1	11.4%	6.7%	1.79x	1.66x	15.6x	13.6	
TAT Technologies Ltd.	TATT	\$	8.70	69.6% - 106.1%		58.9		106.5		9.2	8.7%	na	0.55x	na	6.4x	na	
VSE Corporation	VSEC	\$	51.72	86.3% - 133.0%		754.8		760.1		80.2	10.6%	na	0.99x	na	9.4x	na	
		Мес	ın	81.2% - 129.1%	\$	3,855.1	\$	2,049.2	\$	259.4	12.3%	11.7%	1.78x	2.03x	13.0x	12.5	
		Мес	dian	90.7% - 141.2%	\$	1,775.3	\$	1,663.3	\$	150.1	11.0%	10.1%	1.36x	1.66x	11.9x	11.4)	
Aviation Services																	
AerCap Holdings N.V.	AER	\$	50.72	91.1% - 119.8%	\$	34,532.5	\$	4,987.8	\$	2,405.7	48.2%	6.0%	6.92x	7.03x	14.4x	9.0	
Aircastle Limited	AYR	\$	19.86	78.5% - 104.7%		5,658.2		793.7		na	na	9.4%	7.13x	7.32x	na	7.8	
Air Lease Corporation	AL	\$	42.62	84.1% - 123.8%		13,988.4		1,516.4		na	na	22.7%	9.22x	8.22x	na	9.0	
Air T, Inc.	AIRT	\$	25.30	72.6% - 175.7%		78.4		184.7		6.8	3.7%	na	0.42x	na	11.6x	na	
Air Transport Services Group, Inc.	ATSG	\$	23.32	84.3% - 148.1%		1,910.9		1,068.2		250.1	23.4%	10.5%	1.79x	1.80x	7.6x	6.2	
Arotech Corporation	ARTX	\$	3.05	70.1% - 113.0%		90.2		98.7		6.5	6.6%	49.5%	0.91x	0.88x	13.8x	11.3	
Atlas Air Worldwide Holdings, Inc.	AAWW	\$	60.45	88.0% - 133.0%		3,470.1		2,156.5		438.1	20.3%	10.8%	1.61x	1.40x	7.9x	6.8	
BBA Aviation plc	LSE:BBA	\$	4.50	121.4% - 155.1%		5,840.9		2,370.6		442.2	18.7%	4.1%	2.46x	2.38x	13.2x	12.4	
CAE Inc.	TSX:CAE	\$	18.60	77.3% - 95.0%		5,604.7		2,220.0		403.2	18.2%	5.0%	2.52x	2.44x	13.9x	10.6	
Gogo Inc.	GOGO	\$	8.63	58.5% - 102.1%		1,344.1		699.1		81.2	11.6%	66.9%	1.92x	1.51x	16.5x	16.0	
		Мес	ın	82.6% - 127.0%	\$	7,251.8	\$	1,609.6	\$	504.2	18.8%	20.5%	3.49x	3.66x	12.4x	9.9	
		Мес	dian	81.3% - 121.8%	Ś	4,537.4	Ś	1,292.3	\$	326.6	18.4%	10.5%	2.19x	2.38x	13.5x	9.0	

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.

# **SELECTED PUBLIC COMPANY TRADING DATA**

				S	eled	ted Com	ра	nies Revi	ew								
(\$ in thousands, except per security)																	
				Market Statistics						Me	etrics		Valuation Benchmarks				
		Clo	sing Price	% of 52-week	% of 52-week Enter			Revenue		EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / EBITDA		
Company	Ticker	30-Mar-18		High-Low		Value	LTM		LTM		LTM Margin	2019 E Growth	LTM 2018 E		LTM 2018 E		
Airframe & Engine OEM																	
Airbus SE	ENXTPA:AIR	\$	115.56	115.6% - 168.9%	\$	85,430.8	\$	80,171.7	\$	5,372.2	6.7%	16.9%	1.07x	1.01x	15.9x	9.2x	
The Boeing Company	BA	\$	327.88	88.2% - 186.9%		194,852.8		93,392.0		12,122.0	13.0%	8.4%	2.09x	2.01x	16.1x	14.3x	
Bombardier Inc.	TSX:BBD.B	\$	2.91	69.9% - 148.4%		14,771.6		16,218.0		665.0	4.1%	40.7%	0.91x	0.84x	22.2x	11.9x	
Dassault Aviation SA	ENXTPA:AM	\$	1,910.80	120.3% - 163.3%		14,628.0		5,803.0		535.0	9.2%	19.1%	2.52x	2.42x	27.3x	24.5x	
Embraer S.A.	BOVESPA:EMBR3	\$	6.52	27.9% - 44.2%		5,829.1		5,649.0		541.7	9.6%	22.0%	1.03x	1.03x	10.8x	9.1x	
General Electric Company	GE	\$	13.48	44.1% - 105.9%		254,561.7		121,252.0		5,134.0	4.2%	-0.1%	2.10x	2.07x	49.6x	14.8x	
Rolls-Royce Holdings plc	LSE:RR.	\$	12.23	123.0% - 163.3%		23,410.7		22,041.0		2,349.1	10.7%	8.8%	1.06x	1.11x	10.0x	9.5x	
Safran SA	ENXTPA:SAF	\$	105.93	114.7% - 153.0%		44,988.0		20,509.1		4,232.7	20.6%	15.1%	2.19x	1.78x	10.6x	10.5x	
Textron Inc.	TXT	\$	58.97	94.8% - 131.0%		18,125.9		14,198.0		1,484.0	10.5%	8.8%	1.28x	1.24x	12.2x	11.3x	
United Technologies Corporation	UTX	\$	125.82	90.4% - 115.3%		122,021.0		59,837.0		10,043.0	16.8%	8.9%	2.04x	1.91x	12.1x	11.3x	
		Mean		88.9% - 138.0%	Ś	\$ 77,862.0		43,907.1	\$	4,247.9	10.5%	14.9%	1.63x	1.54x	18.7x	12.6x	
			edian	92.6% - 150.7%		34,199.4	\$ \$	21,275.0	, \$	3,290.9	10.0%	12.0%	1.66x	1.51x	14.1x	11.3x	
Defense Contractors										,							
AeroVironment, Inc.	AVAV	\$	45.51	77.1% - 169.0%	\$	856.1	\$	306.9	\$	45.7	14.9%	142.9%	2.79x	2.65x	18.8x	47.5x	
BAE Systems plc	LSE:BA.	\$	8.16	119.6% - 153.0%	·	27,280.9	Ė	24,764.5	·	2,539.7	10.3%	4.9%	1.10x	1.04x	10.7x	8.7x	
Elbit Systems Ltd.	TASE:ESLT	Ś	120.52	22.4% - 29.5%		5,426.0		3,377.8		402.1	11.9%	7.6%	1.61x	1.50x	13.5x	12.5x	
General Dynamics Corporation	GD	\$	220.90	96.0% - 119.0%		67,502.0		30,973.0		4,618.0	14.9%	7.7%	2.18x	2.06x	14.6x	14.2x	
Harris Corporation	HRS	\$	161.28	98.0% - 151.9%		22,891.5		5,979.0		1,357.0	22.7%	9.0%	3.83x	3.65x	16.9x	15.2x	
Huntington Ingalls Industries, Inc.	HII	\$	257.76	93.2% - 140.5%		12,117.2		7,441.0		1,058.0	14.2%	0.3%	1.63x	1.61x	11.5x	9.9x	
Kratos Defense & Security Solutions, Inc.	KTOS	\$	10.29	73.9% - 139.6%		1,229.8		751.9		41.4	5.5%	29.8%	1.64x	1.90x	29.7x	22.4x	
L3 Technologies, Inc.	LLL	\$	208.00	95.1% - 130.5%		19,233.0		9,573.0		1,334.0	13.9%	8.7%	2.01x	1.93x	14.4x	14.3x	
Leonardo S.p.a.	BIT:LDO	\$	11.55	71.7% - 137.6%		10,085.1		13,841.3		1,464.9	10.6%	5.5%	0.73x	0.70x	6.9x	5.0x	
Lockheed Martin Corporation	LMT	\$	337.93	93.1% - 127.0%		108,626.1		51,048.0		6,588.0	12.9%	7.7%	2.13x	2.12x	16.5x	13.4x	
Mercury Systems, Inc.	MRCY	\$	48.32	87.9% - 133.9%		2,300.8		446.9		86.8	19.4%	15.1%	5.15x	4.34x	26.5x	18.6x	
Northrop Grumman Corporation	NOC	\$	349.12	97.1% - 148.5%		64,818.5		25,803.0		3,774.0	14.6%	13.1%	2.51x	2.29x	17.2x	15.2x	
Raytheon Company	RTN	\$	215.82	96.9% - 144.2%		64,427.4		25,348.0		3,797.0	15.0%	6.5%	2.54x	2.41x	17.0x	13.0x	
Thales S.A.	ENXTPA:HO	\$	121.89	121.3% - 146.4%		22,520.2		18,966.6		2,092.3	11.0%	13.7%	1.19x	1.14x	10.8x	8.8x	
		Ме	ean	88.8% - 133.6%	\$	30,665.3	\$	15,615.8	\$	2,085.6	13.7%	19.5%	2.22x	2.10x	16.1x	15.6x	
			edian	94.1% - 140.1%	, \$	,		11,707.1	, \$	1,411.0	14.1%	8.2%	2.07x	1.99x	15.6x	13.8x	

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.

James S. Cassel
Chairman
jcassel@cs-ib.com
305-438-7701

Scott E. Salpeter
President
ssalpeter@cs-ib.com
305-438-7702

Joseph "Joey" Smith

Director, Aviation Services

jsmith@cs-ib.com

305-438-7706

801 Brickell Ave.
Suite 1900
Miami, Florida 33131
Telephone 305-438-7700
Fax 305-438-7710
www.casselsalpeter.com