

Salem Partners – Aerospace & Defense

Quarterly Review

Introduction

Quarter in Review Q3 2015

Dear Friends,

We hope everyone had a (at least somewhat) relaxing summer. For our group, vacations were kept to a minimum as a pretty full deal plate has kept us happily busy throughout the normal summer doldrums. Our clients cover a pretty wide-range of A&D sub-verticals, but we remain most active within the aerostructure supply-chain. Many clients are experiencing similar positive developments including beginning to build backlog for next-generation commercial platforms (B737MAX and B777X) and seeing returns on investment as the Joint Strike Fighter begins its long-awaited production ramp. These supportive trends continue to paint an optimistic outlook that enables and encourages private equity and strategic buyers to stretch on valuations.

This last quarter's M&A story was all about the mega-deal, with both Precision Castparts and Sikorsky announcing headline-grabbing transactions. The implications for both transactions remain to be seen as both companies play an integral role in supply-chain dynamics, albeit in different ways. PCC, as we discussed in our previous piece, has played an outsized role in the context of M&A activity due to its aggressive build-out of its aerostructure division. On the other hand, Sikorsky is a critical customer to many Tier II businesses, particularly in the Northeast. Our expectations regarding both of these transactions is that the status-quo will remain for the most part in-place.

Any time a major transaction occurs it leaves us wondering where we sit in the always-cyclical M&A environment. Including the two larger deals mentioned, A&D YTD transaction value is in excess of \$90 billion; for comparison, the combined A&D transaction value of 2008 – 2010 fails to reach this figure. While always cautious, we see nothing in the near-term that would signal anything other than continued strength and vitality for the M&A environment.

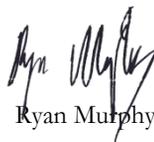
We always welcome your thoughts or questions, and would be happy to reach out to discuss these topics or any others that may interest you.

Sincerely,



Trevor Bohn

Managing Director



Ryan Murphy

Vice President

HIGHLIGHTS

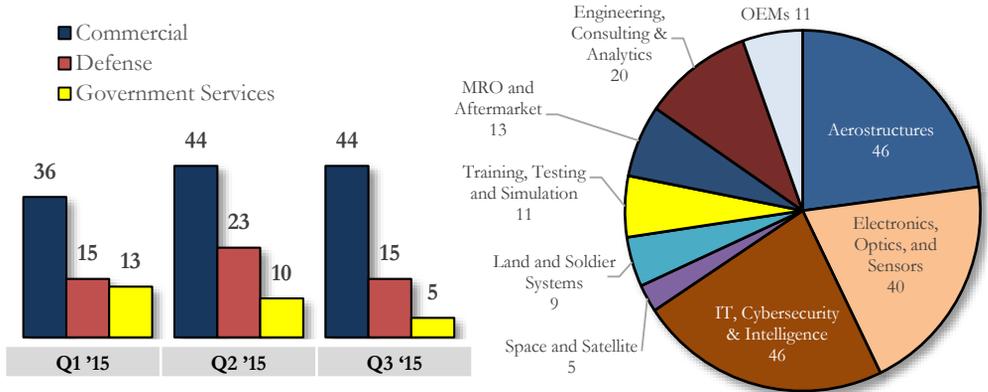
❖ 2015YTD A&D M&A activity strong

❖ Notable A&D acquisitions demonstrate industry trends

Market Snapshot

Select Aerospace & Defense M&A Activity

2015YTD Deal Volume by End-Market and Product Category



Q3 Notable Transactions

Target	Buyer	Price (\$mm)	EV / EBITDA
Sikorsky Aircraft	Lockheed Martin	\$9,000	13.0x
Precision Castparts	Berkshire Hathaway	\$37,200	13.9x
BBA Aviation	Landmark Aviation	\$2,065	12.8x
Novetta Solutions	The Carlyle Group	\$555	12.3x
Fokker Technologies Group	GKN	\$776	9.2x

Lockheed Martin Acquires Sikorsky Aircraft

Lockheed Martin acquired Sikorsky Aircraft for \$9.0 billion from United Technologies Corporation as Lockheed continues to refocus on strengthening its core defense capabilities and expanding its platform offerings.



Berkshire Hathaway Acquires Precision Castparts

Berkshire Hathaway acquired Precision Castparts for \$37.2 billion in what was Warren Buffet's biggest deal ever. This move is suggestive of Buffet's long-term confidence in the commercial aerospace sector.

BERKSHIRE HATHAWAY INC.



BBA Aviation Acquires Landmark Aviation

BBA Aviation acquired Landmark Aviation from private equity firm The Carlyle Group for \$2.1 billion. The acquisition of the 3rd largest jet services provider solidifies BBA Aviation's position as the largest FBO in the world.



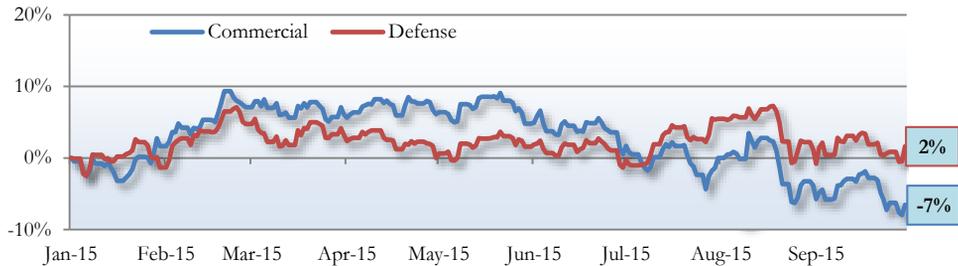
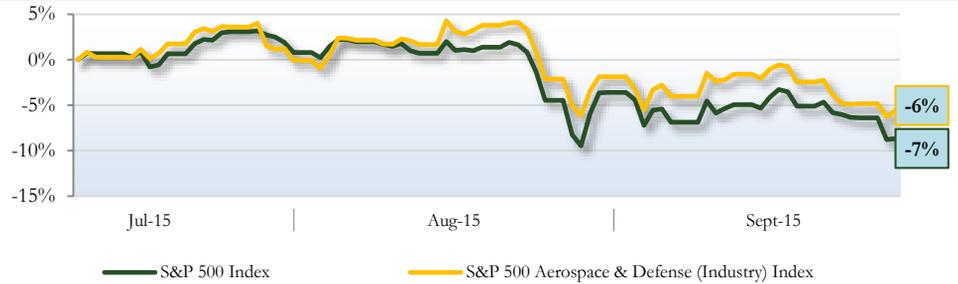
HIGHLIGHTS

- ❖ Aerospace and defense equity experience decline in Q3

Market Snapshot

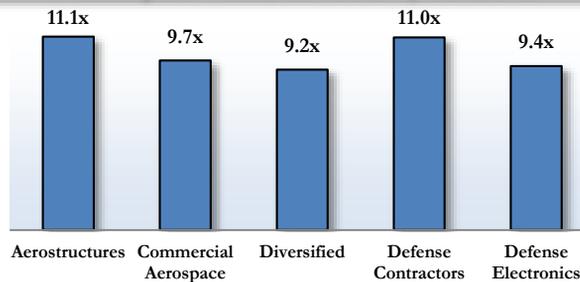
Select Aerospace & Defense Public Markets Activity

Q3 Relative Performance



Source: Capital IQ, analyst estimates, and other publicly available information

Enterprise Value/EBITDA by Subsector



The economic slowdown in China weighed heavily on Commercial OEMs and Tier 1 suppliers as many investors cut their exposure to China's turbulent economy.

For Bombardier, the market remains pessimistic about the company's fortunes and the pending 2016 delivery of the CSeries. Demand for the \$2 billion over-budget and 2 years behind schedule program has been quite weak in 2015, with Bombardier yet to receive a single new order for the aircraft this year.

On the other hand, defense contractors Lockheed Martin, Northrop Grumman, and Raytheon fared far better, weathering a tumultuous market and benefiting from strong international sales due to continuing regional tensions in the Middle East, Europe, and Asia as well as several DoD program ramp ups.

Q3 Share Price Performance

Boeing	-5.6%
Bombardier	-25.8%
Crane	-20.6%
Embraer	-15.5%
General Dynamics	-2.6%
L-3 Communications	-7.8%
Lockheed Martin	11.5%
Moog	-23.5%
Northrop Grumman	4.6%
Raytheon	14.2%
Rockwell Collins	-11.4%
Spirit Aerosystems	-12.3%
Textron	-15.7%
Triumph Group	-36.2%
United Technologies	-19.8%

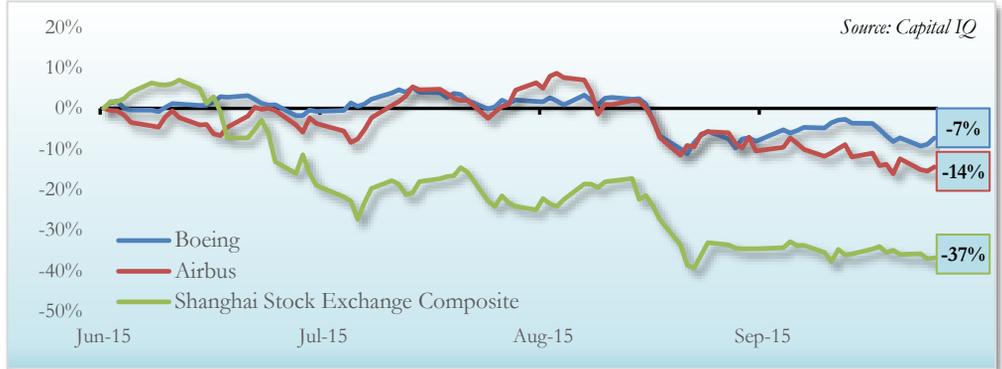
HIGHLIGHTS

❖ Revenue exposure of global aerospace sector to China revealed in fallout from recent Chinese market turbulence

❖ Long-term structural economic conditions for air travel in China remain favorable and should off-set recent economic slowdown

Commercial Aerospace Landscape

Implications of the Chinese Economic Slowdown



The recent violent correction in the Chinese market brought with it the most significant downward pressure on commercial aerospace since the start of the current upcycle. Boeing and Airbus experienced share price declines roughly in line with each's perceived exposure to China before leveling off.

Emerging markets have been a key driver for the current commercial upcycle, with China acting as an important contributor. Boeing and Airbus deliveries to Chinese operators in 2014 represented approximately 18% and 23% of total deliveries for each OEM, respectively. While the economic slowdown is cause for concern in the short-term, several important factors suggest that long-term demand for air travel in China remains strong and that the country will continue to be a driver for growth in commercial aerospace sector for years to come.

1 Demand for New Aircraft Remains Strong

Boeing and Airbus' current China-bound backlog stands at 227 and 292 aircraft, respectively. Despite recent turbulence, Boeing still forecasts that China will triple its fleet within the next 20 years with 6,360 new aircraft deliveries, predominantly single aisle aircrafts that cater to a swelling regional market.

Chinese Aircraft Backlog			
Boeing		Airbus	
737	171	A320/A321	263
777	23	A330	19
787	34	A350	10

Source: Boeing and Airbus

2 Growing Chinese Middle Class Will Continue to Drive Demand

Recent trends have shown that as the Chinese middle class continues to grow, so too does their willingness to travel. While currently the Chinese population travels far less than their European and North American counterparts, Airbus projects in its most recent Global Market Forecast that trips per capita for Chinese travelers will increase from 0.30 in 2014 to 1.09 trips in 2034, trending more toward Europeans and North Americas who make 1.21 and 1.63 trips per capita, respectively.

3 Less Aftermarket Demand Driven by Young Chinese Fleet

An increasingly larger portion of new aircraft deliveries in recent years have been received by the Southeast Asian market; as such, the majority of the commercial fleet is relatively new. Aerospace suppliers have much less aftermarket exposure to China compared to OEMs and the new aircraft supply chain.

Region	Avg. Fleet Age
China	6
N. America	15
Europe	10
L. America	9
Africa	15

Source: Airfleets.net

4 Aviation Infrastructure Remains Key Driver for Economic Growth

China has made significant investment in their aviation infrastructure in recent years and that trend is expected to continue. The Chinese government, which majority-owns most of China's airlines, plans to open 40 new airports in the next five years, all part of the Government initiative towards a more consumer-friendly economy.

HIGHLIGHTS

❖ Oshkosh awarded contract to produce successor vehicle to Humvee

❖ Armored protection against evolving modern threats a key catalyst for new JLTV platform

❖ DoD selected Oshkosh's L-ATV from a number of submissions including Lockheed Martin's JLTV and AM General's BRV-O vehicles

Defense Landscape

Oshkosh Awarded JLTV Contract

On August 25th, the DoD awarded Oshkosh Corporation's L-ATV with the Army's Joint Light Tactical Vehicle (JLTV) program contract, an effort begun in 2006 to identify the successor of the widely used High Mobility Multipurpose Wheeled Vehicle (HMMWV or Humvee). While the Humvee is expected to remain in service until 2050, after over thirty years in service its role is being relegated to transport and light support, with the JLTV slated to assume majority of future combat-related functions.



Accelerating the necessity of a Humvee replacement became a priority for the Army after increasing encounters with improved explosive devices (IEDs) in recent Iraq and Afghanistan engagements left lightly-armored Humvees insufficiently equipped. No doubt Oshkosh's leading role in supplying Mine-Resistant Ambush Protected (MRAP) vehicles in response to IEDs was a weighing factor in the company's selection for the JLTV, which will incorporate similar armaments to currently-fielded MRAP vehicles.

The award marks a huge win for Oshkosh in a competition that included submissions from Lockheed Martin and Humvee manufacturer AM General. Unsurprisingly for such a large award, Lockheed Martin and BAE (a key subcontractor to Lockheed's JLTV submission) have already protested while AM General announced that it will not protest the DoD's decision.

	  HMMWV	  JLTV	  BRV-O	  L-ATV
Variants	1. A2 series 2. Reliability Extended 3. Expanded-Capacity 4. International	1. Combat Tactical Vehicle (CTV) 2. Combat Support Vehicle (CSV)	1. Combat Tactical Vehicle (CTV) 2. Combat Support Vehicle (CSV)	1. Combat Tactical Vehicle (CTV) 2. Combat Support Vehicle (CSV)
Weight	5,200lbs.	12,650lbs.	14,000lbs.	14,000lbs.
Payload	Base: 2,500lb Expanded: 5,900lb	CTV: 3,500lb CSV: 5,100lb	CTV: 3,500lb CSV: 5,100lb	CTV: 3,500lb CSV: 5,100lb
Engine	V8 diesel 6.2L; 190HP	4.5 liter Cummins 4 cylinder turbo Diesel; 202 HP	3.2L twin-turbocharged; 300HP	6.6L GM Duramax V8, 275-575HP
Range	250mi.	400mi.	300mi.	300mi.
Speed	65mph	74mph	70mph	70mph

HIGHLIGHTS

❖ *JLTV represents one of the largest DoD procurement programs; some 55,000 vehicles expected to be procured under current contract*

❖ *JLTV is a strategic priority and key funding item for DoD in a budget dominated by aircraft*

Defense Landscape

Assessing the Importance of the JLTV Program Within the Larger DoD Budget

Units and Funding for Initial JLTV Award

August's \$6.7bln award for nearly 17,000 L-ATVs is the first buy from an expected \$31bln procurement effort for a total of nearly 55,000 vehicles over the next 25 years under the JLTV IDIQ.

	FY'14	FY'15	FY'16	FY'17	FY'18	FY'19	FY'20
Quantity	-	191	559	1,093	2,641	3,195	3,314
RDT&E (\$mm)	\$131.6	\$55.1	\$69.1	\$49.2	\$5.3	\$6.0	\$5.1
Procurement (\$mm)	-	172.1	387.8	753.8	1,377.8	1,697.8	1,791.8
Total (\$mm)	\$131.6	\$227.3	\$456.9	\$803.0	\$1,383.1	\$1,703.8	\$1,796.9

While procurement spend is largely dominated by platforms with significantly higher per-unit sticker prices, JLTV still makes up a meaningful portion of DoD's major program spend, and signals the Army's priority to equip the warfighter with a more capable vehicle for modern theater.

FY2016 Major Program Spend by Type



Key Ground Systems Programs and Funding (\$mm)

Program	Contractor	Role	FY'12	FY'13	FY'14	FY'15	FY'16
 Stryker		Combat	\$720.7	\$303.2	\$439.6	\$594.0	\$666.9
 M1 Abrams		Tank	\$576.8	\$457.2	\$366.0	\$459.5	\$445.5
 M109 Paladin		Combat	-	\$188.6	\$199.5	\$327.7	\$426.1
 JLTV		Tactical	-	\$94.8	\$131.6	\$227.3	\$456.9
 HMMWV		Tactical	\$4.3	\$326.8	\$101.0	\$217.3	-
 M2/M3 Bradley		Combat	\$262.6	\$342.5	\$231.6	\$212.2	\$298.8
 MRAP		Tactical	\$571.2	\$158.8	\$481.2	\$211.7	\$412.2
 Family of Med. Tactical Vehicles		Tactical	\$437.8	\$346.7	\$307.7	\$195.8	\$334.0

Public Market A&D Valuations

Select Company Trading Levels as of September 30, 2015

Company	Market Cap.	Enterprise Value	Revenue	EBITDA	EV/Revenue	EV/EBITDA	Debt/EBITDA
B/E Aerospace Inc.	\$4,663	\$6,493	\$2,682	\$474	2.42x	13.7x	4.7x
BAE Systems plc	\$21,427	\$24,324	\$25,647	\$2,493	0.95x	9.8x	2.0x
Boeing Co.	\$88,980	\$88,452	\$94,944	\$9,479	0.93x	9.3x	1.0x
Bombardier Inc.	\$2,782	\$8,151	\$19,883	\$1,088	0.41x	7.5x	7.3x
CAE Inc.	\$2,835	\$3,625	\$1,825	\$355	1.99x	10.2x	3.0x
Chemring Group plc	\$652	\$877	\$547	\$54	1.60x	16.2x	2.5x
Cobham plc	\$4,895	\$6,768	\$3,249	\$556	2.08x	12.2x	4.3x
Dassault Systemes SA	\$18,573	\$17,308	\$2,899	\$707	5.97x	24.5x	0.6x
Embraer SA	\$4,728	\$5,520	5,083	\$527	1.09x	10.5x	4.4x
Esterline Technologies Corp.	\$2,124	\$2,860	\$1,991	\$301	1.44x	9.5x	1.7x
Finmeccanica SpA	\$7,220	\$13,671	\$16,627	\$1,692	0.82x	8.1x	4.2x
General Dynamics Corp.	\$44,520	\$43,901	\$31,779	\$4,632	1.38x	9.5x	0.9x
GKN plc	\$6,950	\$8,041	\$11,060	\$1,319	0.73x	6.1x	1.1x
Hexcel Corp.	\$4,325	\$4,798	\$1,871	\$397	2.56x	12.1x	1.1x
Honeywell International Inc.	\$74,025	\$74,337	\$39,362	\$7,111	1.89x	10.5x	1.3x
ITT Corporation	\$2,989	\$2,508	\$2,534	\$418	0.99x	6.0x	0.0x
L-3 Communications Holdings Inc.	\$8,396	\$12,066	\$11,654	\$1,188	1.04x	10.2x	2.9x
Lockheed Martin Corporation	\$64,377	\$69,577	\$45,398	\$6,146	1.53x	11.3x	1.0x
Meggitt PLC	\$5,575	\$6,652	\$2,561	\$562	2.60x	11.8x	1.9x
MTU Aero Engines AG	\$4,267	\$5,205	\$4,790	\$563	1.09x	9.2x	1.9x
Northrop Grumman Corporation	\$31,098	\$35,718	\$23,945	\$3,585	1.49x	10.0x	1.6x
Orbital ATK	\$4,248	\$5,783	\$3,590	\$492	1.61x	11.7x	3.9x
Raytheon Co.	\$33,166	\$36,547	\$22,753	\$3,336	1.61x	11.0x	1.5x
Rheinmetall AG	\$2,331	\$3,043	\$5,515	\$361	0.55x	8.4x	3.0x
Rockwell Collins Inc.	\$10,784	\$12,908	\$5,262	\$1,195	2.45x	10.8x	2.0x
Rolls Royce Holdings plc	\$18,836	\$19,950	\$21,791	\$2,647	0.92x	7.5x	1.3x
SAAB AB	\$2,823	\$3,192	\$2,876	\$188	1.11x	17.0x	1.3x
Safran SA	\$31,273	\$33,511	\$18,691	\$3,454	1.79x	9.7x	1.7x
Smiths Group plc	\$6,007	\$7,259	\$4,531	\$732	1.60x	9.9x	2.8x
Spirit AeroSystems Holdings, Inc.	\$6,634	\$6,829	\$6,708	\$1,052	1.02x	6.5x	1.2x
Textron Inc.	\$10,405	\$13,628	\$13,753	\$1,606	0.99x	8.5x	2.6x
Thales SA	\$14,448	\$14,096	\$15,177	\$1,553	0.93x	9.1x	1.2x
TransDigm Group Incorporated	\$11,371	\$18,955	\$2,540	\$1,129	7.46x	16.8x	7.2x
Triumph Group, Inc.	\$2,075	\$3,585	\$3,951	\$372	0.91x	9.6x	3.5x
Ultra Electronics Holdings plc	\$1,810	\$2,037	\$1,108	\$183	1.84x	11.1x	1.5x
United Technologies Corp.	\$79,254	\$97,459	\$64,038	\$12,358	1.52x	7.9x	1.7x
Zodiac Aerospace	\$6,291	\$7,879	\$5,047	\$652	1.56x	12.1x	1.9x
Average					1.70x	10.7x	2.4x
Median					1.49x	10.0x	1.9x

Market data as of September 30th, 2015; financial data per most recent filing available as of September 30th, 2015
 \$US in mm; conversion rate, if applicable, based on historical exchange rate as of most recent filing date
 Source: Capital IQ, analyst estimates, and other publicly available information

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