

Aerospace & Defence

Industry Update

Q1 2023

As befits the start of spring the green shoots of recovery are evident all over the commercial aerospace market – even the previously barren wide-body market. Capacity in the market is increasing to pre-Covid levels, scheduled domestic capacity was up at 104% of pre-Covid levels and scheduled global international capacity was at 89% of the same quarter in 2019. China is still down and lagging behind the rest of Asia (domestic now at 2019 levels) but is coming back strongly. Wide-body orders are picking up – Air India ordered 20 787s and 40 A350s in February, United ordered 100 787s – but, for Boeing in particular, wide-body deliveries are only expected to reach 75% of 2019 levels by 2027. Numbers of parked aircraft are dropping but, contrary previous crises, 2001 and 2008, there has so far been low levels of retirements. Parked aircraft are down 49% from the 2020 level but remain quite elevated historically: 14% of narrow-body fleet and 23% of wide-body. Retirements have been exceptionally low since the pandemic started, defying most predictions. Carriers are likely holding capacity in storage, pending aircraft production increases that can facilitate retirements.

So as ever all eyes focus on the new build rates which, as usual, depend upon the supply chain's ability to deliver. Anecdotally there appears to be different attitudes to this pressure on either side of the Atlantic. The European approach ensures that pain is passed down the supply chain whilst the North American approach acknowledges that those further down the supply chain lack the resilience to absorb pressure and so should be proactively protected; reducing payment days to ease the working capital burden is common practice in the US but a rare and exceptional phenomenon in Europe. European deliveries have not been helped by the fire at Praxair's Weston Supermare coatings facility over Christmas. A single point of failure for coatings has impacted a number of critical engine programmes. From the engine perspective Flight Global highlighted high park rates for Geared Turbo Fan aircraft – 12% on A320neo versus 4% on LEAP powered A320s. Whilst no definitive reason was given, anecdotal evidence points to significantly extended maintenance lead times, shortage of spare engines and broader durability issues with new generation engines which require more frequent shop visits. Castings and forgings remain a major pinch point, engine OEMs are having to choose whether to sent to new build or MRO resulting in significantly longer turnaround times for engine shop visits.

Transactions in the space remain muted. In market MRO related businesses are attracting significant interest. As the year progresses sentiment will continue to grow off the back of sustained demand – listed European Aerospace stocks are up 30% so far this year. I would expect the chalets and booths of Paris to be full of coy suitors gently positioned for a more focussed courtship in Q4 2023 and Q1 2024.

Aerospace						EV/Revenue Revenue (GBPm) Revenue growth			EV/EBITDA EBITDA (GBPm) EBITDA %			EV/EBIT EBIT (GBPm) EBIT %			2 Year CAGR 2022 2024			
Company	Country	Year End Date	Market Cap (GBPm)	Net Debt / (Cash)	Adj EV (GBPm)	Net debt / EBITDA (2023)		2022	2023	2024	2022	2023	2024	2022	2023	2024	Sales	EBITDA
Airbus SE		Dec-22	85,267	(4,858)	81,716	n/a	1.6x	1.4x	1.3x	11.9x	10.6x	9.0x	17.7x	15.1x	12.1x	11%	15%	
							52,122	56,471	64,029	6,881	7,715	9,111	4,616	5,423	6,749			
							19%	8%	13%	13%	14%	14%	9%	10%	11%			
Boeing Company		Dec-22	102,886	34,328	141,635	7.8x	2.6x	2.2x	1.9x	n/mf	32.2x	19.3x	n/mf	55.2x	24.7x	15%	132%	
							55,281	63,676	73,655	1,367	4,396	7,330	(243)	2,564	5,724			
							20%	15%	16%	2%	7%	10%	(0)	4%	8%			
Bombardier Inc.		Dec-22	4,184	4,263	8,965	4.5x	1.6x	1.4x	1.3x	17.0x	9.6x	8.1x	26.0x	15.5x	12.6x	8%	44%	
							5,737	6,275	6,654	528	938	1,100	345	577	713			
							28%	9%	6%	9%	15%	17%	6%	9%	11%			
Dassault Aviation Société anonyme		Dec-22	13,278	(8,331)	2,927	n/a	0.5x	0.6x	0.5x	4.3x	5.8x	4.4x	5.5x	7.8x	6.0x	(8%)	(1%)	
							6,268	4,858	5,351	686	509	669	536	374	490			
							2%	(22%)	10%	11%	10%	12%	9%	8%	9%			
HEICO Corporation		Oct-22	16,590	520	17,423	0.9x	8.7x	7.8x	7.3x	32.9x	29.5x	26.9x	44.3x	34.8x	31.5x	9%	11%	
							1,996	2,229	2,390	529	591	647	393	501	552			
							42%	12%	7%	26%	27%	27%	20%	22%	23%			
Howmet Aerospace Inc.		Dec-22	14,104	2,893	17,565	2.6x	3.7x	3.5x	3.3x	16.8x	15.5x	13.5x	24.1x	19.1x	16.4x	7%	12%	
							4,700	4,963	5,365	1,046	1,134	1,301	729	918	1,071			
							28%	6%	8%	22%	23%	24%	16%	19%	20%			
MTU Aero Engines AG		Dec-22	10,848	487	11,471	0.5x	2.4x	2.1x	1.9x	18.5x	12.2x	11.0x	26.1x	17.1x	14.9x	14%	30%	
							4,728	5,499	6,172	619	937	1,045	440	672	772			
							34%	16%	12%	13%	17%	17%	9%	12%	13%			
Rolls-Royce Holdings plc		Dec-22	12,452	3,459	15,610	2.0x	1.2x	1.1x	1.1x	10.0x	8.8x	7.7x	19.8x	18.0x	14.1x	4%	14%	
							13,520	13,704	14,729	1,555	1,767	2,026	787	867	1,109			
							21%	1%	7%	12%	13%	14%	6%	6%	8%			
Safran SA		Dec-22	50,910	255	50,315	0.1x	2.9x	2.5x	2.2x	14.7x	13.0x	11.0x	22.9x	18.5x	15.0x	13%	16%	
							17,450	20,201	22,465	3,414	3,875	4,575	2,193	2,714	3,358			
							36%	16%	11%	20%	19%	20%	13%	13%	15%			
Senior plc		Dec-22	643	179	817	1.9x	1.0x	0.9x	0.8x	10.2x	8.6x	7.4x	25.5x	18.7x	13.9x	10%	17%	
							848	944	1,022	80	96	110	32	44	59			
							29%	11%	8%	9%	10%	11%	4%	5%	6%			
Singapore Technologies Engineering Ltd		Dec-22	6,938	3,684	10,622	4.5x	1.9x	1.8x	1.7x	15.3x	12.9x	11.9x	29.1x	21.4x	19.4x	6%	14%	
							5,592	5,865	6,247	694	822	896	365	496	548			
							33%	5%	7%	12%	14%	14%	7%	8%	9%			
Textron Inc.		Dec-22	11,627	1,638	13,266	1.2x	1.2x	1.2x	1.1x	10.6x	9.9x	9.1x	16.3x	13.3x	12.0x	5%	8%	
							10,681	11,213	11,868	1,251	1,345	1,456	813	999	1,103			
							17%	5%	6%	12%	12%	12%	8%	9%	9%			
Min							0.5x	0.6x	0.5x	4.3x	5.8x	4.4x	5.5x	7.8x	6.0x	(8%)	(1%)	
Mean							2.4x	2.2x	2.0x	14.7x	14.0x	11.6x	23.4x	21.2x	16.1x	8%	26%	
Median							1.7x	1.6x	1.5x	14.7x	11.4x	10.0x	24.1x	18.3x	14.5x	9%	15%	
Max							8.7x	7.8x	7.3x	32.9x	32.2x	26.9x	44.3x	55.2x	31.5x	15%	132%	

Source: CapIQ

Note: (a) Multiples are based on enterprise value as of 31-March-2023 and historical and forecast sales, EBITDA and EBIT, calendarised to 31 December. "n/mf": not meaningful; "n/a": not available.

I concluded the last update from 2022 by confidently predicting the next Cold War would be contested in space rather than underwater. To emphasise the fragility of that prediction the AUKUS allies promptly announced the details of the agreement that confirms the strategic importance of the nuclear submarine for the foreseeable future. To save any blushes let's just agree that space AND subsea will be important frontiers for both confrontation and investment. For the AUKUS agreement the timeframes are lengthy, the task in hand gargantuan and the messaging clear. Such a momentous transfer of sensitive technology confirms the focus for US foreign policy – and its not Europe. From the perspective of the US military – industrial complex Europe is also not the primary focus. The €94bn increase in spending on the continent if NATO countries do adhere to the 2% GDP spend on defence, sounds like a huge opportunity. However it is likely only 40% of that would be spent on hardware and, assuming a third of this could be captured by US companies this £13bn, whilst material, is less than the \$14bn increase in the US DOD investment account in 2022 (an increase that is expected to be repeated in 2023).

The message on US priorities seems to be permeating the Defence Ministries of the European nations and triggering a serious re-appraisal of spending priorities and the reality of collective security in an age of dwindling US commitment. Which is not to say the US political commitment to Ukraine is dwindling – it is just their stocks of munitions that is. The French, in particular, in line with a political statement that cautioned against dependency upon the US, are pushing through significant spending increases to the end of the decade: a c. 9% annual increase in hardware investment from 2024 to 2030. The UK's update to its Integrated Defence Review was published in February. Near term growth of 5% in the next two years barely offsets inflation but the commitment to 2.5% of GDP in the future does reflect more ambitious intent and appears to have cross party support. The near term commitment is at the bottom end of expectations but does increase FY23 spending to 2.2% of GDP and represents a £5bn increase to be split between: £3bn for nuclear defence activities, which encompasses the modernisation of manufacturing and maintenance capacity for nuclear submarines, including to support the delivery of AUKUS; and £2bn for replenishing depleted stockpiles and to invest in the resilience of the UK's munitions infrastructure. In Germany it is expected that the €100bn special defence fund will not have any impact on the supply chain until H2 2023 at the earliest, with many doubting it will impact this year to any meaningful extent. In an M&A market that is generally slow, activity in the defence sector remains robust; increasing visibility on long term spending commitments coupled with lack of capacity in the supply chain means that investors have the conviction to pay up for scarce assets and execute quickly before others beat them to it.

Defence		EV/Revenue			EV/EBITDA			EV/EBIT			2 Year CAGR						
		Revenue (GBPm)			EBITDA (GBPm)			EBIT (GBPm)			2022 2024						
		Revenue growth			EBITDA %			EBIT %									
Company	Country	Year End Date	Market Cap (GBPm)	Net Debt / (Cash)	Adj EV (GBPm)	Net debt / EBITDA (2023)	2022			2023			2024			Sales	EBITDA
							2022	2023	2024	2022	2023	2024	2022	2023	2024		
BAE Systems plc		Dec-22	29,973	3,842	33,213	1.2x	1.6x	1.4x	1.3x	12.1x	10.4x	9.7x	16.0x	12.8x	11.9x	10%	12%
Elbit Systems Ltd.		Dec-22	6,080	891	6,840	2.0x	1.5x	1.5x	1.3x	17.9x	15.2x	11.8x	31.3x	19.2x	17.8x	6%	23%
General Dynamics Corporation		Dec-22	50,585	9,023	61,326	2.1x	1.9x	1.8x	1.7x	13.5x	14.1x	12.7x	18.2x	16.8x	14.8x	4%	3%
Kratos Defense & Security Solutions, Inc.		Dec-22	1,380	231	1,620	3.2x	2.2x	2.0x	1.8x	nmf	22.7x	18.0x	nmf	nmf	47.4x	9%	73%
L3Harris Technologies, Inc.		Dec-22	30,132	5,820	36,104	2.0x	2.5x	2.5x	2.4x	15.2x	12.6x	11.9x	25.4x	15.6x	14.4x	3%	13%
Leidos Holdings, Inc.		Dec-22	10,209	4,236	14,475	3.4x	1.2x	1.2x	1.1x	11.9x	11.5x	10.8x	17.4x	14.6x	13.2x	3%	5%
Leonardo S.p.a.		Dec-22	5,467	2,752	6,868	1.7x	0.5x	0.5x	0.5x	5.3x	4.3x	4.0x	7.5x	6.2x	5.5x	4%	15%
Lockheed Martin Corporation		Dec-22	97,256	11,701	113,759	1.5x	2.1x	2.1x	2.1x	15.9x	14.3x	14.0x	20.8x	16.7x	16.4x	(0%)	7%
Northrop Grumman Corporation		Dec-22	56,747	10,035	66,904	2.3x	2.2x	2.2x	2.0x	10.5x	15.5x	14.4x	14.4x	20.5x	18.7x	4%	(15%)
Raytheon Technologies Corporation		Dec-22	115,422	22,937	140,558	2.2x	2.5x	2.4x	2.2x	15.0x	13.5x	12.0x	26.6x	20.2x	17.8x	7%	11%
Rheinmetall AG		Dec-22	10,424	242	10,974	0.2x	1.9x	1.6x	1.3x	12.9x	9.8x	7.8x	16.7x	12.8x	9.8x	20%	28%
Saab AB (publ)		Dec-22	6,526	(260)	6,371	n/a	1.9x	1.7x	1.5x	16.7x	13.2x	11.5x	22.3x	20.2x	16.9x	12%	21%
Thales S.A.		Dec-22	25,163	154	25,783	0.1x	1.7x	1.6x	1.5x	11.7x	10.4x	9.5x	20.0x	13.7x	12.3x	5%	11%
Min							0.5x	0.5x	0.5x	5.3x	4.3x	4.0x	7.5x	6.2x	5.5x	(0%)	(15%)
Mean							1.8x	1.7x	1.6x	13.2x	12.9x	11.4x	19.7x	15.8x	16.7x	7%	16%
Median							1.9x	1.7x	1.5x	13.2x	13.2x	11.8x	19.1x	16.2x	14.8x	5%	12%
Max							2.5x	2.5x	2.4x	17.9x	22.7x	18.0x	31.3x	20.5x	47.4x	20%	73%

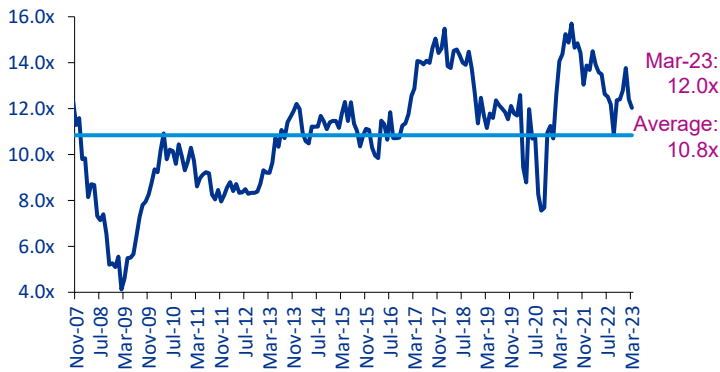
Source: CapIQ

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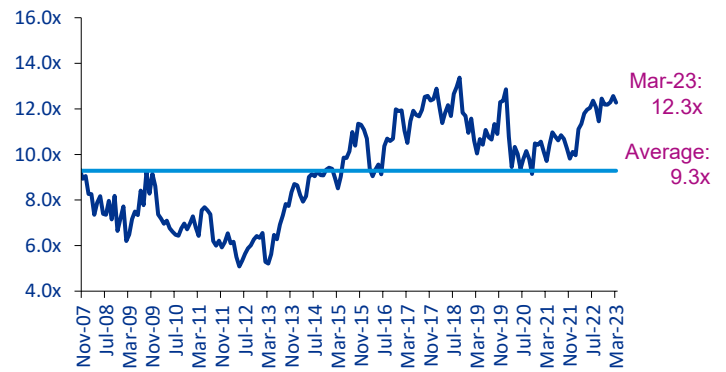
Public company valuations – through the cycle (EV/LTM EBITDA)

Aerospace



Source: Capital IQ

Defence



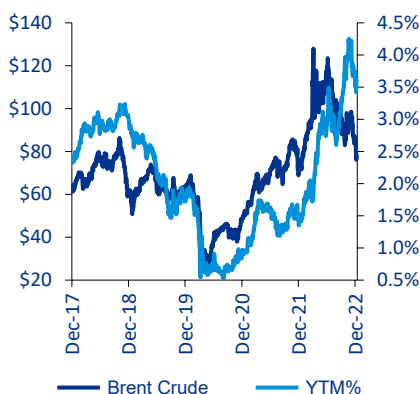
Source: Capital IQ

Selected M&A highlights

- Mar 23: **TransDigm Group** has acquired **Calspan Corporation**, a US-based provider of highly engineered testing and technology development services and systems primarily for the aerospace & defence industry
- Mar 23: **SPIROL International** has acquired **Ford Aerospace Limited**, a UK-based manufacturer of engineered products for aerospace, defence, technology, and industrial markets
- Feb 23: **Renk AG**, through its subsidiary **Horstman Defence Systems**, a portfolio company of **Triton**, has acquired **General Kinetics Engineering Corp**, the Canada based manufacturer of a broad range of suspension system and damping components for military vehicles, from **CIEL Capital**
- Feb 23: **Wencor Group LLC**, a portfolio company of **Warburg Pincus**, has acquired **Aero-Glen International LLC**, the US distributor of aerospace fasteners, fittings, machined parts, and other specialized hardware
- Feb 23: **StandardAero Inc**, a portfolio company of **Carlyle**, has acquired **Western Jet Aviation, Inc**, a US-based jet maintenance service provider
- Feb 23: **Flexjet LLC** has acquired **Constant Aviation, LLC**, a US-based provider of aircraft maintenance, repair, and overhaul services for general and commercial aviation customers
- Jan 23: **Highlander Partners LP** has acquired **Black Sage Technologies Inc**, the US software company providing autonomous airspace protection solutions to take down small remote piloted aircraft systems from **Acorn Growth Companies LLC**
- Jan 23: **Amicus Capital** has acquired a stake in **Aequis** an India-based diversified contract manufacturing company providing vertically integrated product solutions across the aerospace and oil and gas industries specialising in precision machining, sheet metal fabrication, assembly, forging, and special processing
- Jan 23: **Unical Aviation Inc** has acquired **iAero Thrust LLC**, the US provider of aviation engine maintenance repair and overhaul services, from **iAero USA Inc**

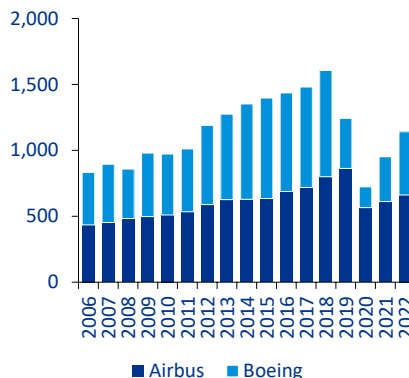
Economic Indicators

Brent Crude (\$) vs. US 10 Yr Treasuries



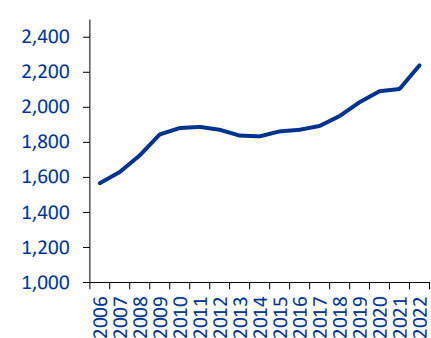
Source: Capital IQ

Delivered Commercial Aircraft (Units)



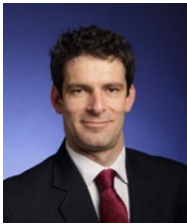
Source: Airbus, Boeing reports

Global Defence Spend (\$bn)



Source: SIPRI Military Expenditure Database

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